Pennsylvania Department of Environmental Protection

Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063

August 20, 2002

The Secretary

Phone: 717-787-2814
E-Mail: DavidHess@state.pa.us

Mr. Donald S. Welsh
Regional Administrator
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Welsh:

On December 27, 2001, the Pennsylvania Department of Environmental Protection (PADEP) submitted a revision to the State Implementation Plan (SIP) for the sulfur dioxide (SO_2) nonattainment area of Conewango Township, Pleasant Township, Glade Township, and the City of Warren in Warren County, Pennsylvania. I have enclosed, for your approval, three copies of Appendix B of the comprehensive Warren County SO_2 SIP revision to replace the previously submitted Appendix B portion of the SIP revision.

The enclosure includes copies of the pertinent portions of the Reliant Energy Mid Atlantic Power Holdings LLC (Reliant) Title V/State Operating Permit (Permit No TV 62-00012). These copies provide the clarifying information requested by your staff. The Reliant Operating Permit submittal now contains only language that pertains to the SO_2 SIP revision. For federal enforcement purposes under the Pennsylvania SIP, the Operating Permit shall remain in effect as part of the SIP until replaced pursuant to 40 CFR Part 51 and approved by the U.S. Environmental Protection Agency.

We request that you incorporate the applicable terms and conditions of the Reliant Operating Permit as part of the SIP for this approval process. Should you or your staff have any questions or comments regarding this SIP revision, please contact Joyce E. Epps, Director, Bureau of Air Quality at 717-787-9702.

Sincerely,

David E. Hess
Secretary

Enclosures

Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
December 26, 2001

The Secretary

Phone: 717-787-2814
E-Mail: DavidHess@state.pa.us

Mr. Donald S. Welsh
Regional Administrator
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Welsh:

Enclosed for your approval are three copies of the recommended comprehensive Pennsylvania State Implementation Plan (SIP) for the Sulfur Dioxide (SO_2) nonattainment areas of Conewango Township, Pleasant Township, Glade Township, and the City of Warren in Warren County, Pennsylvania. This latest comprehensive SIP revision submittal replaces all previously submitted SIP revisions for the SO_2 nonattainment areas in Warren County.

The enclosures include copies of the Reliant Energy Mid-Atlantic Power Holdings and the United Refining Company operating permits. The expiration dates shown on these Operating Permits are for State purposes. For Federal enforcement purposes under the Pennsylvania SIP, the Operating Permits shall remain in effect as part of the SIP until replaced pursuant to 40 CFR 51 and approved by the U.S. Environmental Protection Agency.

We request that you review and approve this SIP revision. Should you or your staff have any questions or comments regarding this SIP revision, please contact James M. Salvaggio, Director, Bureau of Air Quality, at 717-787-9702.

Sincerely,

David E. Hess
Secretary

Enclosures

REVISION TO THE STATE IMPLEMENTATION PLAN FOR THE SULFUR DIOXIDE NONATTAINMENT AREA OF CONEWANGO TOWNSHIP, PLEASANT TOWNSHIP, GLADE TOWNSHIP, AND THE CITY OF WARREN IN WARREN COUNTY, PA

October 31,2001

BUREAU OF AIR QUALITY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMONWEALTH OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE IMPLEMENTATION PLAN REVISION FOR SULFUR DIOXIDE NONATTAINMENT AREA OF CONEWANGO TOWNSHIP, PLEASANT TOWNSHIP, GLADE TOWNSHIP, AND THE CITY OF WARREN IN WARREN COUNTY, PA

Summary:

This submission to the State Implementation Plan (SIP) is a comprehensive SIP revision submitted to the United States Environmental Protection Agency (EPA) for the sulfur dioxide (SO_2) nonattainment area of Conewango Township, Glade Township, Pleasant Township, and the City of Warren in Warren County, Pennsylvania. This SIP revision contains enforceable operating permit emission limitations for the Reliant Warren Generating Station and the United Refining Company and an air quality modeling demonstration indicating attainment of the National Ambient Air Quality Standards (NAAQS) for SO_2 in the aforementioned area.

Background:

Reliant Energy Mid Atlantic Power Holdings LLC (Reliant), (formerly GPU Generation Corporation and formerly Pennsylvania Electric Company) owns and operates the Warren Generating Station. The Station has been in operation since 1948 and consists of four boilers feeding two turbine generators, one gas/oil-fired combustion turbine unit and one oil-fired emergency diesel. Sulfur dioxide emissions are controlled by fuel specification. Ambient air quality modeling indicated that the National Ambient Air Quality Standard (NAAQS) was being exceeded for SO_2 in the Conewango Township area of the Warren Generating Station. On March 3, 1978, EPA designated Conewango Township in Warren County, Pa as nonattainment for SO2 pursuant to Section 107 of the Clean Air Act, [42 U.S.C. S 7407] and the Department's recommendation of December 5, 1977.

United Refining Company owns and operates an oil refinery, which processes fuels and asphalt from crude oil. This facility is located in the City of Warren, Warren County that adjoins Conewango Township. Glade Township, Pleasant Township, and the City of Warren, PA were designated as nonattainment for sulfur dioxide by EPA on December 21, 1993(58 FR 67334). This redesignation was based upon modeled exceedances of the short-

term sulfur dioxide standards at the United Refining Company facility.

History:

On March 3, 1978, the EPA designated Conewango Township, the area in the vicinity of the Warren Generating Station, as nonattainment for SO_2 pursuant to Section 107 of the Clean Air Act, [42 U.S.C. S 7407] and the Department's recommendation of December 5, 1977. This nonattainment designation was based on air quality dispersion modeling conducted in 1976. This modeling analysis was later found suspect because EPA determined that the study did not meet modeling guidelines and that meteorological data may have been suspect.

On December 27, 1982, the Department requested that the area be reclassified to "unclassifiable", but EPA rejected the request because the statutory attainment date, December 31, 1982, had passed by the time EPA received the request. A March 17, 1983, request to have the area redesignated to "attainment" was rejected by the EPA because the request did not contain adequate modeling in support of the request.

After the Pennsylvania Electric Company (Penelec) reported monitored exceedances of the SO_2 NAAQS, the EPA on February 24, 1984 notified the Department that it must submit a SIP revision for the area to address the NAAQS nonattainment. In response to the SIP call, on December 5, 1984, Penelec and the Department entered in to a Consent Order and Agreement (COA) which required Penelec to conduct a model evaluation study to select a dispersion model to be used to set an allowable emission rate for the Warren Generating Station. The COA authorized the use of the Large Area Power Plant Effluent Study (LAPPES) model if its performance was shown superior to the EPA preferred model for the area. TRC Environmental Corporation was retained by Penelec to prepare the modeling analyses for the Warren Generating Station.

The December 5, 1984, Consent Order and Agreement was submitted to EPA as a SIP revision on December 28, 1984. EPA in a May 9, 1985, Federal Register Notice proposed approval of the SIP revision.

Modeling activities and the air quality analyses conducted under the COA indicated that the data from United Refining Company were necessary to complete the model evaluation study. In the 1988-1989-time period, United began to supply SO_2 emission data necessary to complete the model study.

On June 1992, EPA notified the Commonwealth that mandatory Clean Air Act sanctions would be imposed if the Commonwealth failed to

submit an approvable SO_2 SIP for Conewango Township by December 1, 1993. In response, Penelec and the Department agreed that Penelec would conduct a model comparison study of the Rough Terrain Diffusion Model (RTDM) and the LAPPES Model for the Conewango Township area. The criteria for making the determination were specified in a modeling protocol, "Protocol for the Model Performance comparison Study for PENELEC'S Warren Generating Station" submitted by Penelec in September 1992. The Department responded to this protocol document through the Consent Order of April 1, 1993.

On December 26, 1992, the Department published notice of a public hearing and public comment period to accept comments regarding the proposed SIP revision to address the SO_2 nonattainment in Conewango Township, Warren County. A public hearing was scheduled for January 28, 1993 with the comment period closing on February 28, 1993. No comments were submitted by the public as a result of the public hearing and comment period.

The SIP revision, which was the subject of the public hearing, established the provisions and requirements contained in the COA. The COA provided for the development, installation and operation of an ambient air quality monitoring system, development of a modeling protocol and completion of a modeling evaluation and modeling study to determine an allowable sulfur dioxide emission limitation for the Warren Generating Station which will be protective of the ambient air quality standard in the area.

The SIP revision established interim sulfur dioxide emission limitations for the coal-fired boilers at the Warren station. In addition, the SIP limited the sulfur dioxide emissions from the coal-fired units at the Warren station to 1.0 pounds per million Btu's or 1280 pounds per hour whichever is less after November 15, 1995, unless the modeling study demonstrates and the Department establishes that another emission rate is protective of the ambient air quality standard.

Following the completion of the comment period, the Department submitted the SIP revision to EPA including a copy of the signed Consent Order and Agreement, dated April 1, 1993, and modeling results and support data for the area on December 9, 1993.

The Glade Township, Pleasant Township, and City of Warren, PA have been designated as nonattainment for sulfur dioxide by the EPA in 58 FR 67334 dated December 21, 1993. The redesignation of these areas as nonattainment for SO_2 was based upon conservative modeling conducted in the mid 1980's that showed modeled exceedances of short-term sulfur dioxide standards at the United Refining Company in Glade Township.

The Department granted permission to United Refining Company to model the area, which includes certain high terrain "hotspots" in the immediate vicinity of the facility. The modeling was performed using the EPA Guideline model CTSCREEN, and was completed in April 1993. The modeling showed that the high terrain "hotspots" are in attainment of the NAAQS for SO_2.

The Department submitted a combined SIP revision for the SO_2 nonattainment area of Conewango Township, and to redesignate the nonattainment areas of Glade Township, Pleasant Township, and the City of Warren on September 26, 1995. The EPA reviewed this SIP revision and requested additional modeling. Because of the interaction between the Conewango Township nonattainment area and the Glade Township, Pleasant Township and the City of Warren nonattainment area, the Department has prepared a combined SIP revision addressing both areas.

Modeling Studies:

A steep river valley characterizes the area around the city of Warren. Figure 1 (attachment) shows the location of the Warren Generating Station and United Refining Company. Each is in separate arms of the valley. There is high terrain between the two facilities. The City of Warren lies between the two facilities and along Conewango Creek.

Dispersion modeling analyses is required to demonstrate attainment of the SO_2 NAAQS. The COA with Penelec established a protocol for conducting the modeling. The consultant contracted by Penelec to perform all of their modeling was TRC Environmental Corporation (TRC). The models used in the compliance analyses were the Large Area Power Plant Effluent Study (LAPPES) model, the Rough Terrain Diffusion Model (RTDM), and the Multiple Point with Terrain (MPTER) model. The Department and EPA approved the protocol for the study. The model comparison study showed that the LAPPES model, a non-Guideline model, is the superior model for determining air quality impacts from the Warren Station in terrain above stack top. Details of the model comparison study can be found in the document " Final Report on the Model Performance Comparison Study for Warren Generating Station," May 1994.

TRC ran the LAPPES model using local meteorological data and emissions data as it existed in the operating permit prior to the issuance of the current operating permit on September 12, 1994 for United Refining. The LAPPES results show that the Conewango Township area is in attainment of the SO_2 NAAQS. In addition, this study showed some high impacts from United Refining.

The designated nonattainment area of Glade Township, Pleasant Township and the City of Warren adjoins the Conewango Township nonattainment area. This designation was based upon conservative modeling performed by the VALLEY model in the mid-1980's. This first-generation complex terrain "impact" model showed numerous exceedances of the sulfur dioxide short-term standards in the high terrain adjacent to the United Refining Company. United Refining collected meteorological data for one year. Using this data, United Refining contracted Sigma Research to conduct modeling using the ISC2/RTDM models. This modeling study is contained in the document "Sulfur Dioxide Modeling Analysis for United Refining Company", November 1992. This modeling identified three high-terrain "hotspots" in the immediate vicinity of United Refining Company where Warren Generating Station was a significant contributor to the sulfur dioxide exceedances. In the proposed SIP revision package submitted to EPA on December 9, 1993 to support the Conewango Township reclassification action, the concept of a modeling domain was developed. Because of periodic interaction between the Warren Generating Station and United Refining Company, the modeling domain has been defined to include receptors in Conewango, Pleasant, and Glade Townships and the City of Warren. The Department granted permission to United Refining Company to model these "hotspots" with the EPA Guideline model CTSCREEN (see Sigma Research modeling document, November 1992). Even though the Penelec facility was modeled at their maximum allowable emissions, the use of CTSCREEN in the modeling effort eliminated sulfur dioxide exceedances at all high terrain receptors. This modeling study shows the area is in attainment with the National Ambient Air Quality Standard for sulfur dioxide.

The Department was concerned about any potential conflicts between TRC's LAPPES modeling study and Sigma Research's CTSCREEN study. In addition, the Department wished to explore the interaction of the two facilities on the high terrain. Therefore, the Department conducted a modeling study to support changes to the SIP for Pleasant and Glade Townships and the City of Warren (DER's Air Quality Modeling Study, January 1995). Even though there is a different receptor database from the other studies, the maximum concentrations validate the conclusion that normal operation of the United Refining Company (current emission limits are shown in Table 1) and the Warren Generating Station will not cause violations of the National Ambient Air Quality Standard for sulfur dioxide.

This new comprehensive SIP revision consists of a supplement to the dispersion modeling analysis and the resulting allowable emission rate for SO_2 compliance at the Warren Generating Station, Conewango Township, Warren County. This modeling supplement, "Modeling Analysis For SO_2 NAAQS Compliance For

Warren Generating Station -Supplement", May 1996 addresses concerns raised by EPA regarding the previous SO_2 compliance dispersion modeling analyses. The major concerns raised by EPA were the determination of representative background concentrations and the resolution of differences between TRC's modeling analysis and the DER modeling analysis.

The accompanying modeling report supplement (copy in Appendix D) is based on the combined TRC and DER modeling results. The maximum impacts were calculated using a hybrid set of results from TRC's modeling analysis and from DER's modeling analysis. Some instances of "receptor replacement" between the two studies were needed in order to compare the impacts of the various models used in the two studies. The report describes the dispersion modeling analyses, the determination of revised background concentrations and the development of revised SO_2 emission limits.

Modeling Conclusions:

The modeling results show attainment of the SO_2 NAAQS in Conewango Township, the City of Warren, Pleasant Township, and Glade Township. This attainment occurs under normal operations of the United Refining Company and when the Warren Generating Station is emitting at the proposed rates. The Department is proposing sulfur dioxide emission limitations for the Warren Generating Station while operating all four units as follow:

3 - Hour	4.00 lb SO_2/MMBtu
24 - Hour	3.53 lb SO_2/MMBtu
Annual Average	3.53 lb SO_2/MMBtu

United Refining Company emission rates are the current permit allowables as per the current operating permit issued on September 12, 1994. These limits are consolidated in Table 1. The United Refinery sources shall comply with all applicable requirements of NSPS 40 CFR 60 Subpart J and Subpart GGG and also 40 CFR Section 60.4.

The Department has been operating a monitor at the modeled peak hot spot since November 27, 1996. This monitor data from the Warren Overlook site will be reviewed to determine if the region maintains attainment of the SO_2 NAAQS.

The first maximum monitored SO2 values are as follows:

	1997	1998	1999	
3 - Hour	0.353	0.270	0.255	ppm
24 - Hour	0.109	0.108	0.116	ppm
Annual Mean	0.015	0.016	0.015	ppm

These values are below the NAAQS of:

3 - Hour	0.50 ppm
24 - Hour	0.14 ppm
Annual Mean	0.03 ppm

The emission rates in the operating permit for the Warren Generating Station are legally binding. This allows the Department to establish an emission limitation for the Warren Generating Station based on modeling completed by GPU Generation Corporation, now Reliant. If approved by EPA as a revision of the SIP, these emission limitations will be included in the facility's Title V permit. The EPA has authority to enforce the operating permit as discussed in the Federal Register (July 30, 1996 Page 39597).

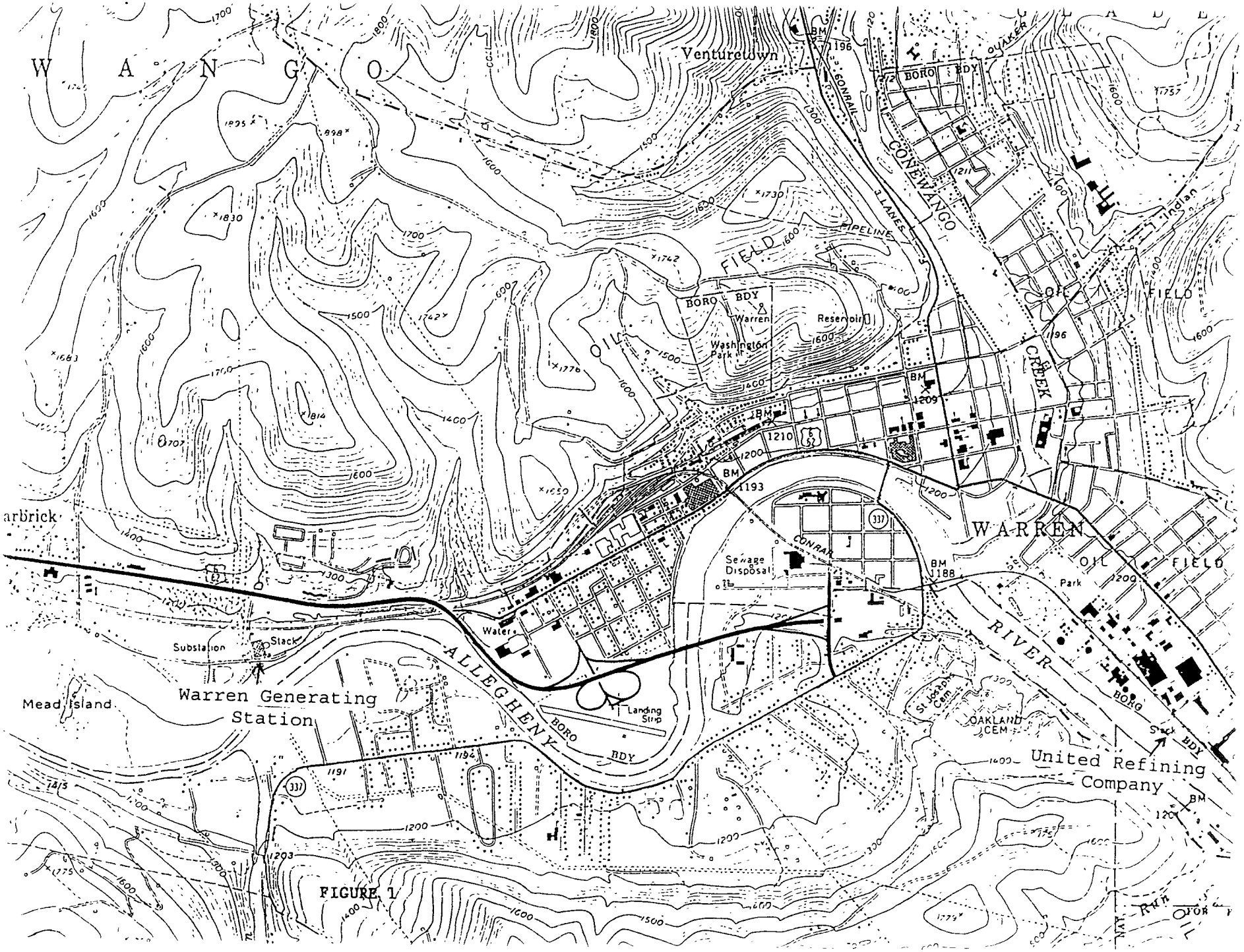
Conclusions:

In response to EPA's concerns, the Department has completed the necessary modeling analyses to demonstrate compliance with the SO_2 NAAQS in the Conewango, Glade and Pleasant Townships and the City of Warren nonattainment areas. In addition, the Department has adopted 3-hour, 24-hour and annual sulfur dioxide emission rates for the Warren Generating Station. The area has modeled attainment in the approved EPA protocol. The United Refining Company, the other major source in the modeling domain, was included in all the modeling to support these studies. The latest United Refining Company operating permits are found in Appendix A and their consolidated allowable emission rates are listed in Table 1. The operating permit for Reliant's Warren Generating Station is found in Appendix B with their adopted emission limits and all of the relevant testing, reporting, record keeping, etc., requirements contained in the permit. The November 1997 public hearing announcements and documentation are contained in Appendix C of this document.

Table 1

Emission Rates
for
United Refining Company

ID	Source	LB/HR SO_2	Rate SO_2 GPS
A	Boiler House	195.1	24.58
B	No. 4 Boiler	24.3	3.06
C	FCC Charge Heater	1.1	0.14
D	DHTI Heater	0.1	0.01
E	Prefract Reboiler East	9.0	1.13
F	Prefract Reboiler West	9.0	1.13
G	Old Reformer Heater	91.3	11.50
H	Crude (WHECO) Heater	207.7	26.27
	Vacuum Heater	0.8	0.01
I	Pretreater Heater	28.0	3.53
J	New Reformer Heater	2.2	0.28
K	Debut Reboiler	0.4	0.05
L	FCC Regenerator	285.0	35.91
M	Combo Flare (Blowdown)	0.4	0.05
N	FCC Flare (Blowdown)	0.1	0.01
O	No. 5 Boiler	1.2	0.15
P	Sat Gas KVG	0.1	0.01
Q	T-241 Heater	0.3	0.04
R	DHT2 Heater (New)	33.4	4.21
S	SRU2 Incinerator (New)	12.0	1.51
T	SRU2 Hot Oil Heater	0.1	0.01
U	Middle FCC KVG Cmprs Eng	0.14	0.02
V	East FCC KVG Compressor	0.14	0.02
W	VCU Unit	0.81	0.10
	Total	902.59	


W A N G O
Venturetown
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BONRAIL
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CONEWANGO
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CREEK
Warren
Reservoir
Washington Park
BM 1209
BM 1210
BM 1193
WARREN
Sewage Disposal
CONRAIL
BM 1188
Park
RIVER
Water
Substation
Stack
Warren Generating Station
Mead Island
ALLEGHENY
Landing Strip
St Joseph Cem
OAKLAND CEM
United Refining Company
arbrick

FIGURE 1

Air Quality Modeling Study to Support Changes to
State Implementation Plan
for
Pleasant Township, Glade Township, City of Warren
Warren County, Pennsylvania

[January 3, 1995]

I. Background

Federal Register, Volume 58, No.243, Tuesday, December 21, 1993, Page 67334, designated the Glade and Pleasant Townships and the City of Warren, PA as non-attainment for sulfur dioxide. Pursuant to section 191(a) of the Clean Air Act, the Commonwealth of Pennsylvania is required to submit an implementation plan for the Warren area to EPA within 18 months of the effective date of redesignation. Therefore, the revision must be submitted to EPA by July 20, 1995. Section 192 of the Clean Air Act indicates the plan must demonstrate attainment of the NAAQS for sulfur dioxide within five (5) years of the redesignation.

The non-attainment area defined by Glade and Pleasant Townships and the City of Warren was based upon modeled exceedances of the short-term sulfur dioxide standards at the United Refining Company facility in Glade Township. This "new" non-attainment area adjoins the Conewango Township non-attainment area which is currently under EPA review for reclassification to attainment. In the 1993 modeling study to support the Conewango Township reclassification action, the concept of **modeling domain** was developed. Because of periodic interaction between the Warren Generating station and United Refining sources, the **modeling domain** has been defined to include receptors in Conewango, Pleasant, and Glade Townships and the City of Warren. In the paragraphs which follow, a brief background description is given which summarizes administrative and modeling activites in this **modeling domain**.

On March 3, 1978, EPA designated Conewango Township in Warren County, PA as non-attainment for sulfur dioxide pursuant to Section L(17) of the Clean Air Act,[42 U.S.C. § 7407] and the Department's recommendation of December 5, 1977. On February 24, 1984 the EPA notified the Commonwealth that the Department must submit a SIP revision for Conewango Township based upon monitored exceedances of the short-term sulfur dioxide standards. On December 5, 1984 the Department and PENELEC entered into a Consent Agreement which required PENELEC to select a dispersion model to be used to set emission limits at the Warren Generating Station in order to bring the Township into compliance. On December 28, 1984 DER submitted this Consent Order to EPA as part of the SIP revision. On May 5, 1985 the EPA published in the **Federal Register** a proposal to approve the SIP revision. 50 Fed. Reg. 19,548, (1985). No further action on approval of the SIP took place until 1992. In the years between 1985 and 1992 both PENELEC and the United Refining Company undertook separate studies aimed at reducing sulfur dioxide emissions in the area in order to meet the NAAQS.

The passage of the Clean Air Amendments of 1990 extended the deadlines for attaining NAAQS to at least five years after November 15, 1990. [42 U.S.C. § 7514, 7414a.] Subsequently, on June 15, 1992, EPA notified the Commonwealth of Pennsylvania that sanctions could be imposed for failure to submit an approvable SIP for Conewango Township within 18 months.

PENELEC and the Department entered into a Consent Order which stipulated that PENELEC would undertake a model evaluation study comparing the guideline model RTDM to the PENELEC preferred model LAPPES. The results of this evaluation would determine the model that would be used to set emission limits for the Warren Generating station in order to bring the area in compliance with NAAQS for sulfur dioxide. PENELEC submitted a protocol defining their approach to this analysis on September 19, 1992. Based on this Department-approved protocol PENELEC completed one year of data collection including meteorological data from their 150-meter tower

and ambient sulfur dioxide monitoring at seven stations. PENELEC competed the guideline model RTDM against their preferred model LAPPES to determine which model would be used to set final emission limits for the Warren Generating plant. This study was completed and submitted to DER late in the Summer 1994. The model LAPPES easily met the model comparison criteria and qualified to be used to set the emission limits for the Warren Generating plant. Although operating currently at a Consent Order emission limit of 3.0 lbs SO_2/MMBTU, the modeling demonstrated attainment for operation of 2 boilers at a rate of 3.32 lbs SO_2 /MMBTU. With the completion and submission of the emissions limit study, the provisions of the Consent Order between the DER and Pennsylvania Electric Company have been met.

DER is currently beginning its review of a study for repowering certain boilers at the Warren Generating Plant. It is expected that this new project will reduce significantly the total sulfur dioxide emissions from this facility and will assure continued attainment of the NAAQS.

In order to meet the EPA-imposed sanctions limit for the Conewango Township non-attainment area, the Department submitted, on December 9, 1993, the proposed SIP revision package to EPA. This study demonstrated that the Consent Order minimum emission limit of 1 lb SO_2/MMBtu at the Warren Generating plant will ensure attainment of the NAAQS in Conewango Township and in the modeling domain adjacent to the facility. A combination of the guideline models MPTER/RTDM was used in the supporting modeling analysis. This emission limit would have become effective on November 15, 1995 unless a higher limit had been justified through the recently completed modeling evaluation. The completeness acknowledgement for the Conewango Township area from EPA Region III was dated January 6, 1994 and a study review is continuing.

The newly designated non-attainment area, which includes Pleasant and Glade Townships and the City of Warren, PA, was based upon VALLEY modeling performed in the mid-1980's. This first-generation complex terrain "impact" model showed showed numerous exceedances of the sulfur dioxide short-term standards in the high terrain adjacent to the United Refining Company.

In order to meet anticipated expansion plans United Refining Company erected a 70-meter meteorological tower instrumented to collect data suitable as input to the model RTDM. At the conclusion of one year of data collection, modeling using ISC2/RTDM was accomplished. The Warren Generating Station at the permit **allowable** emission rate [4.0 lbs SO_2/MMBtu] was modeled in conjunction with the United Refining sources. The "intermediate terrain" modeling results disclosed numerous short-term exceedances of the sulfur dioxide standards. Three specific high-terrain "hotspots" in the immediate vicinity of the United Refining facility were identified with the ISC2/RTDM combination where the Warren Generating station was a significant contributor to the sulfur dioxide exceedances.

The Department granted permission to United Refining to model these "hotspots" with the EPA Guideline model CTSCREEN. Even though the PENELEC facility was modeled at maximum **allowable**, the use of CTSCREEN in the modeling effort eliminated sulfur dioxide exceedances at all high terrain receptors. This modeling was completed in April 1993, but was not submitted by United Refining as a comment to refute the non-attainment area which is being addressed in this study. The modeling which supports this SIP submittal serves to verify the conclusions reached by the United Refining Company consultant, Sigma Research. [The Sigma Research reports documenting attainment in the current study area are included as Appendix A and Appendix B.]

II. Model Description

The primary model used to study the currently permitted United Refining Company and the PENELEC Warren Generating Station was **CTSCREEN** [Version 93228]. This model was the only one proposed for use in the modeling protocol submitted to EPA Region III. However, in the 1994 State/Regional Modelers conference the subject of modeling multiple sources with CTSCREEN

was raised. EPA guidance on the application of CTSCREEN currently restricts model application to those receptors higher than stack height although there is nothing to indicate that the model is not valid down to stack base. There is an area between the height of the shortest and tallest stack in a refinery complex that is complex terrain for some sources and simple terrain for others. In this analysis there were 19 United Refining sources which had to be investigated for this effect.

The 1994 State/Regional Modelers work group explored two options and was expected to recommend that both ISCST2 and CTSCREEN be run separately, with the complete inventory, on a common receptor grid covering the area between the shortest and tallest stacks. In coordination with the EPA Region III Meteorologist, DER followed this general approach.

It should be noted that the meteorological conditions used in the screening mode for CTSCREEN and ISCST2 are not compatible. However, since hourly averages are being produced by both models, it is our opinion that it is not significant. Screening meteorology based upon the stability and wind speeds categories of SCREEN2 taken at 10 degree wind direction increments was prepared as input to the ISCST2 analysis.

Receptors developed for each hill in the CTSCREEN analysis were used as input to the ISCST2 up to the elevation of the tallest stack in the United Refining complex. This range covered receptors at elevations between 1185 feet and 1420 feet MSL.

To add conservatism to the ISCST2 portion of the model runs, DER used the Bowman "intermediate terrain" model known as BEEST-X. The terrain heights varied from 1185 feet [the base of the plant used in CTSCREEN input files and 1420 feet MSL [height of tallest stack in the United Refining refinery complex]. It is noted that ISCST2 [Bowman's BEEST] and BEEST-X were used on the receptors for Hill #1 between the heights discussed above and the "intermediate" model provided slightly more conservative results.

III. MODELING DOMAIN

The modeling domain for this study is identified in Figure 1. Hills Nos. 1 through 3 are the three "hotspot' hills which were identified by the United Refining consultant in their CTSCREEN analysis of the area surrounding the facility. DER regridded these hills so as to confirm the previous modeled results. The receptor locations with heights for Hills #1 through # 3 are listed in Tables 1 through 3, respectively.

Hills Nos. 4 and 5 in Figure 1 were added to the original United Refining study even though these hills were eliminated from their study as being "not significant". The receptor locations with elevations for Hills 4 and 5 combined are given in Table 4.

Hills No.6 and 7 in Pleasant Township [Figure 2] west of the United Refining facility were included in the protocol for this study, but were subsequently eliminated ased upon preliminary modeling. There is little chance for significant oncentrations at these locations interactively and previous studies have also demonstrated negliible impact from sources considered individually.

The non-attainment area consists of Pleasant and Glade Townships and the City of Warren. Based upon extensive previous modeling reviewed and performed using MPTER/RTDM, ISC2/RTDM and CTSCREEN during the Conewango Township SIP analysis, the Department believes that all of the areas with maximum groundlevel concentrations which could exceed the short-term standards for sulfur dioxide have been identified.

IV. Receptors

Contours were selected to provide a representative grid for application of both ISCST2 and CTSCREEN. Contours were generated at elevations of 1185, 1240,1300, 1350 and 1420 feet MSL for ISCST2 with continuation at 50 foot increments to the peak of each hill. All receptor locations are referenced to the United Refining boilerhouse stack location with UTM coordinates of Easterly = 655.660 km and Northerly = 4632.170 km. Receptors were generated using the computer codes associated with CTDMPLUS/CTSCREEN. A complete listing of receptors for all hills is found in Tables 1 through 4.

III. Emission Sources

The stack parameters and emission rates used in the CTSCREEN modeling for the United Refining and Warren sources are listed in Table 5. The sources listed for the United Refining facility were verified from active permit files for completeness and currency. The emission rates are current permit allowable. The emission rate for the Warren Generating station reflects a value of 3.2 lbs SO_2/MMBtu, a value slightly higher than the current Consent Order rate of 3.0 lbs SO_2/MMBtu.

IV. Monitored Background Sulfur Dioxide

The background values of sulfur dioxide for the annual, 24-hour, and 3-hour averaging times were extracted from the report prepared by Sigma Research for the United Refining Company. DER reviewed the development of these values during previous permitting activity. The consultant followed EPA guideline procedures. [Complete details are given in Appendix A]. A summary of their analysis results follows.

Data from the Warren North and South COPAMS stations were used to exlude the major refinery sources and the Penelec Warren station. A map is included in this report as Figure 3. Since the Sigma Research study has been prepared, Warren North has been deactivated and Warren South is going to be relocated to a point considered more representative of the area. Because of unique river valley orientation in the Warren area, many monitored values could not be used. A summary of the sulfur dioxide background concentrations developed by Sigma Research and used in this study with CTSCREEN modeling
results follow:

Averaging Period	Neutral/Stable [ug/m^3]	Unstable [ug/m^3]
3-hour	76	56
24-hour	79	40
Annual	18	18

In the DER study for the Conewango Township sulfur dioxide non-attainment area, monitored observations from the Penelec Preston station were used to establish background concentrations. It is our opinion that the Preston values were more representative of background. The Warren North and South COPAMS stations were subject to residual concentrations because of the recirculation effects in the river valley. However, use of the values above adds conservatism to the analysis.

V. Modeling Results

A summary table showing the DER modeling results for the CTSCREEN modeling is given in Table 6 for Hills 1, 2, 3 and 4/5 combined. The maximum hourly

concentration for each stability class is given along with wind conditions that caused the impact. The conversion factors from CTSCREEN used to estimate 3-hour, 24-hour, and annual concentrations are 0.7, .15, and .03, respectively. The background values listed in Notes have been added to the values shown. Also included in Table 6 is the distance and orientation of the maximum receptor from the United Refining Company boilerhouse stack. The values in the table reflect the estimates for the United Refining impact alone on Hills 1 & 2. It is physically impossible for the United Refining and Warren station to impact the same receptor simultaneously. The tabular values for Hills 3 & 4/5 include contributions from the PENELEC facility.

The analysis demonstrates quite clearly the impact of the United Refining facility on the high gradient terrain within the river valley. The maximum hourly concentration is found at receptors at 1550 feet MSL and above. Although not shown the ISCST2 modeling performed to assess effects of varying stack heights of the refining complex on the lower terrain immediately adjacent to facility did not disclose concentrations which approach those estimated for the higher terrain receptors. The FCC regenerator in the United Refining complex is the major contributor to the maximum concentration receptor in six out of the eight impacts listed. This source also is the highest emitter of the sources. The two other major contributing sources are the Old Reformer Heater and the Crude (Wheco) Heater which have stack heights equivalent to the FCC regenerator (45.72 meters above grade).

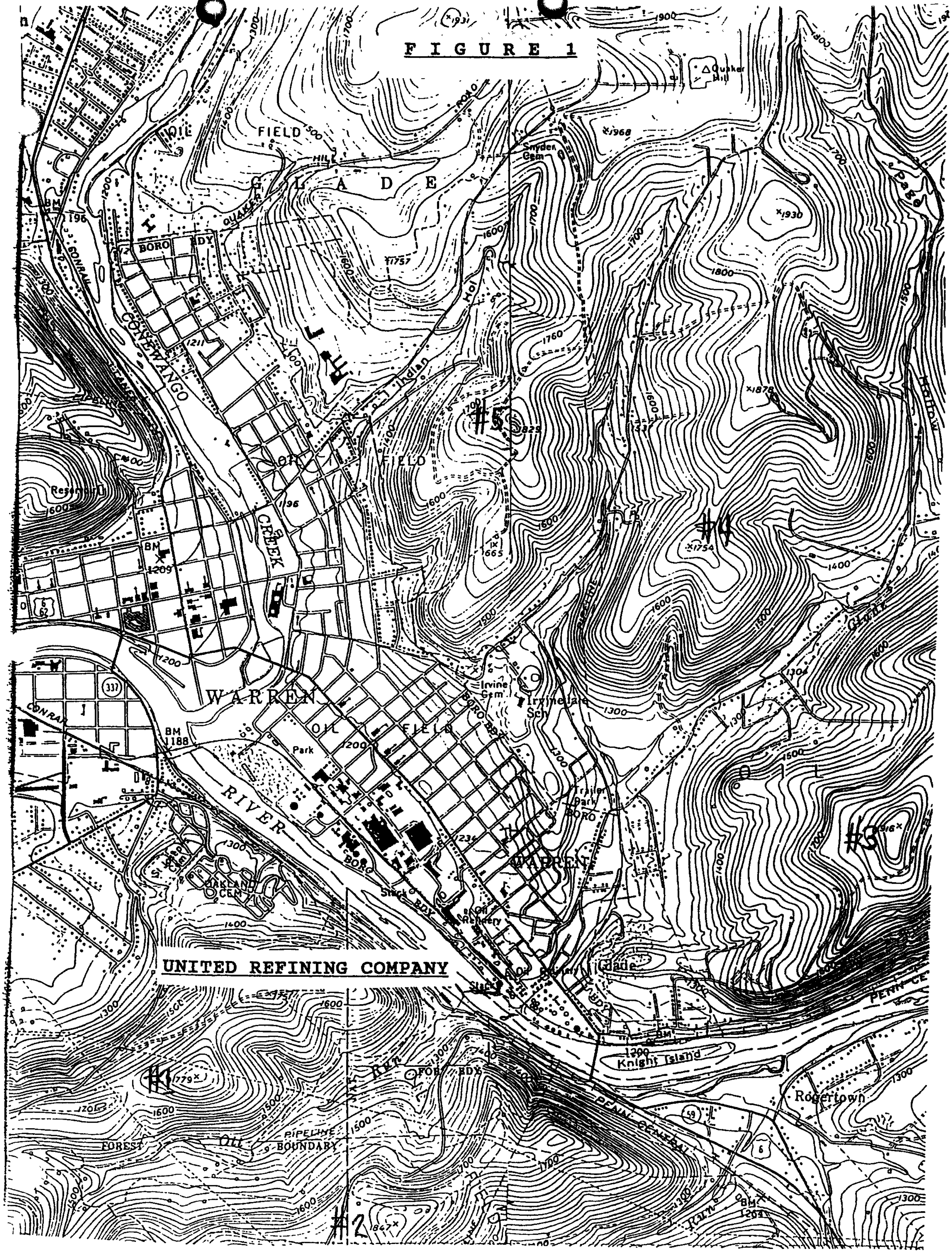
Table 7 summarizes the CTSCREEN results extracted from the United Refining Company studies prepared by Sigma Research. Even though there is a different receptor data base, the maximum concentrations shown validate the conclusion that normal operation of the United Refining Company and the Warren Generating station will not cause violations of the National Ambient Air Quality Standard for sulfur dioxide.

FIGURE 1

HILL LOCATION

UNITED REFINING COMPANY

FIGURE 1



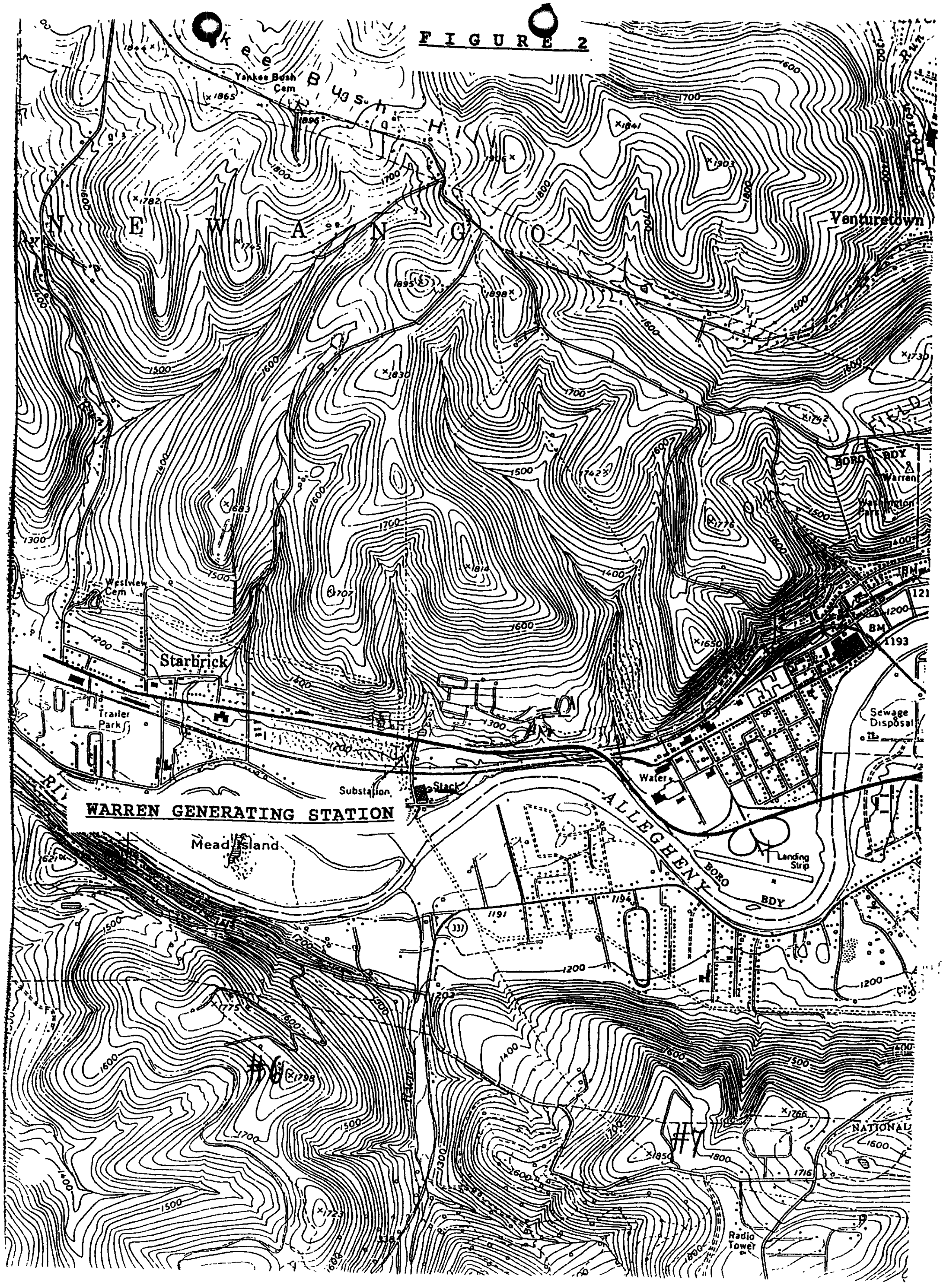
UNITED REFINING COMPANY

FIGURE 2

HILL LOCATION

PLEASANT TOWNSHIP

FIGURE 2



Yankee Bush Cem
N E W A N G O
Venturetown
Westview Cem
Starbrick
Trailer Park
Substation
Stack
Water
ALLEGHENY
BORO BDY
Warren
Washington Park
BM 1193
Sewage Disposal
Landing Strip
WARREN GENERATING STATION
Mead Island
337
NATIONAL
Radio Tower
#6
#7

FIGURE 3

MONITOR LOCATION

WARREN NORTH AND WARREN SOUTH

Figure 2-3. Locations of Warren North and South monitors. (1 km = 2.9 cm)

TABLE 1

HILL #1

RECEPTORS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SUBJECT: Approval of a Revision to the Pennsylvania State Implementation Plan - SO2:Warren County
PA037/072-184-4190
Technical Support Document

June 13, 2002

FROM: Denis M. Lohman, meteorologist
Air Quality Planning & Information Services Branch (3AP21)

TO: SIP Docket File

REVIEWED BY: Walter Wilkie, Acting Branch Chief
Air Quality Planning & Information Services Branch (3AP21)

I Affected Regulation

This revision to the Pennsylvania State Implementation Plan (SIP) applies to sources in the sulfur dioxide (SO_2) nonattainment area of Conewango Township, Glade Township, Pleasant Township, and the City of Warren in Warren County, Pennsylvania. This SIP revision contains enforceable operating permit emission limitations for the Reliant Warren Generating Station and the United Refining Company and an air quality modeling demonstration indicating attainment of the National Ambient Air Quality Standards (NAAQS) for SO_2 in the specified areas.

The two operating permits are:

62-00012	Reliant Energy Mid Atlantic Power Holdings LLC, 1001 Broad Street, Johnstown, PA 15907
62-017E	United Refining Company, 15 Bradley Street, Warren, PA 16365

II Background

Reliant Energy Mid Atlantic Power Holdings LLC (Reliant), (formerly GPU Generation Corporation and formerly Pennsylvania Electric Company) owns and operates the Warren Generating Station. The Station has been in operation since 1948 and consists of four boilers feeding two turbine generators, one gas/oil-fired combustion turbine unit and one oil-fired emergency diesel. Sulfur dioxide emissions are controlled by fuel specification. Ambient air quality modeling indicated that the National Ambient Air Quality Standards (NAAQS) for SO2 were being exceeded in the Conewango Township area of the Warren Generating Station. On

March 3, 1978, in accordance with the December 5, 1977, request of the Pennsylvania Department of Environmental Resources (PADER), EPA designated Conewango Township in Warren County, Pa as nonattainment for $_{SO2}$ pursuant to Section 107 of the Clean Air Act, [42 U.S.C. 5 7407].

United Refining Company owns and operates an oil refinery, which processes fuels and asphalt from crude oil. This facility is located in the City of Warren, Warren County that adjoins Conewango Township. Glade Township, Pleasant Township, and the City of Warren, PA were designated as nonattainment for sulfur dioxide by EPA on December 21, 1993 (58 FR 67334) . This redesignation was based upon modeled exceedances of the short-term sulfur dioxide standards at the United Refining Company facility.

History:

On March 3, 1978, the EPA designated Conewango Township, the area in the vicinity of the Warren Generating Station, as nonattainment for SO2 pursuant to Section 107 of the Clean Air Act, [42 U.S.C. 5 7407] and PADEP's recommendation of December 5, 1977. This nonattainment designation was based on air quality dispersion modeling conducted in 1976. This modeling analysis was later found suspect because EPA determined that the study did not meet modeling guidelines and that meteorological data may have been suspect.

On December 27, 1982, PADEP requested that the area be reclassified to "unclassifiable", but EPA rejected the request because the statutory attainment date, December 31, 1982, had passed by the time EPA received the request. A March 17, 1983, request to have the area redesignated to "attainment" was rejected by the EPA because the request did not contain adequate modeling in support of the request.

After the Pennsylvania Electric Company (Penelec) reported monitored exceedances of the SO_2 NAAQS, the EPA on February 24, 1984 notified PADEP that it must submit a SIP revision for the area to address the NAAQS nonattainment. In response to the SIP call, on December 5, 1984, Penelec and PADEP entered into a Consent Order and Agreement (COA) which required Penelec to conduct a model evaluation study to select a dispersion model to be used to set an allowable emission rate for the Warren Generating Station. The COA authorized the use of the Large Area Power Plant Effluent Study (LAPPES) model if its performance was shown to be superior to the EPA preferred model for the area. TRC Environmental Corporation was retained by Penelec to prepare the modeling analyses for the Warren Generating Station.

The December 5, 1984, Consent Order and Agreement was submitted to EPA as a SIP revision on December 28, 1984. EPA in a May 9, 1985, Federal Register Notice proposed approval of the SIP revision.

Modeling activities and the air quality analyses conducted under the COA indicated that the data from United Refining Company were necessary to complete the model evaluation study. In the 1988-1989-time period, United began to supply SO_2 emission data necessary to complete the model study.

On June 1992, EPA notified the Commonwealth that mandatory Clean Air Act sanctions would be imposed if the Commonwealth failed to submit an approvable SO_2 SIP for Conewango Township by December 1, 1993. In response, Penelec and PADEP agreed that Penelec would conduct a model comparison study of the Rough Terrain Diffusion Model (RTDM) and the LAPPES Model for the Conewango Township area. The criteria for making the determination were specified in a modeling protocol, "Protocol for the Model Performance comparison Study for PENELEC'S Warren Generating Station" submitted by Penelec in September 1992. PADEP responded to this protocol document through the Consent Order of April 1, 1993.

On December 26, 1992, PADEP published notice of a public hearing and public comment period

to accept comments regarding the proposed SIP revision to address the SO_2 nonattainment in Conewango Township, Warren County. A public hearing was scheduled for January 28, 1993 with the comment period closing on February 28, 1993. No comments were submitted by the public as a result of the public hearing and comment period.

The SIP revision, which was the subject of the public hearing, established the provisions and requirements contained in the COA. The COA provided for the development, installation and operation of an ambient air quality monitoring system, development of a modeling protocol and completion of a modeling evaluation and modeling study to determine an allowable sulfur dioxide emission limitation for the Warren Generating Station which will be protective of the ambient air quality standard in the area.

The SIP revision established interim sulfur dioxide emission limitations for the coal-fired boilers at the Warren station. In addition, the SIP limited the sulfur dioxide emissions from the coal-fired units at the Warren station to 1.0 pounds per million Btu's or 1280 pounds per hour whichever is less after November 15, 1995, unless the modeling study demonstrates and PADEP establishes that another emission rate is protective of the ambient air quality standard.

Following the completion of the comment period, PADEP submitted the SIP revision to EPA including a copy of the signed Consent Order and Agreement, dated April 1, 1993, and modeling results and support data for the area on December 9, 1993.

The Glade Township, Pleasant Township, and City of Warren, PA have been designated as nonattainment for sulfur dioxide by the EPA in 58 FR 67334 dated December 21, 1993. The redesignation of these areas as nonattainment for SO_2 was based upon conservative modeling conducted in the mid 1980's that showed modeled exceedances of short-term sulfur dioxide standards at the United Refining Company in Glade Township.

PADEP granted permission to United Refining Company to model the area, which includes certain high terrain "hotspots" in the immediate vicinity of the facility. The modeling was performed using the EPA Guideline model CTSCREEN, and was completed in April 1993. The modeling showed that the high terrain "hotspots" are in attainment of the NAAQS for $_{SO2}$

PADEP submitted a combined SIP revision for the SO_2 nonattainment area of Conewango Township, and to redesignate the nonattainment areas of Glade Township, Pleasant Township, and the City of Warren on September 26, 1995. The EPA reviewed this SIP revision and requested additional modeling. Because of the interaction between the Conewango Township nonattainment area and the Glade Township, Pleasant Township and the City of Warren nonattainment area, PADEP has prepared a combined SIP revision addressing both areas.

III Summary of Action

1. The purpose of this revision is to ensure the federal enforceability of Operating Permits entered between the Pennsylvania, Department of Environmental Protection, and two sources in Warren County, Pennsylvania. The essential special compliance provisions of the Operating Permits are presented below.

Warren Generating Station

Sulfur dioxide emission limitations while operating all four units:

3-Hour	4.00 pounds per million Btu (lb $_{SO2}$/MMBtu)
24-Hour	3.53 lb $_{SO2}$/MMBtu
Annual Average	3.53 lb $_{SO2}$/MMBtu

The sulfur dioxide emission rates are the current permit allowable (tabulated below) in the operating permit issued on September 12, 1994. In addition, the United Refinery sources shall comply with all applicable requirements of NSPS 40 CFR 60 Subpart J and Subpart GGG and also with 40 CFR Section 60.4.

Table 1
Emission Rates
for
United Refining Company

ID	Source	LB/HR S02	Rate S02 GPS
A	Boiler House	195.1	24.58
B	No. 4: Boiler	24.3	3.06
C	FCC Charge Heater	1.1	0.14
D	DHTI Heater	0.1	0.01
E	Prefract Reboiler East	9.0	1.13
F	refract Reboiler West	9.0	1.13
G	Old Reformer Heater	91.3	11.50
H	Crude (WHECO) Heater	207.7	26.27
	Vacuum Heater	0.8	0.01
I	Pretreater Heater	28.0	3.53
J	New Reformer Heater	2.2	0.28
K	Debut Reboiler	0.4	0.05
L	FCC Regenerator	285.0	35.91
M	Combo Flare (Blowdown)	0.4	0.05
N	FCC Flare (Blowdown)	0.1	0.01
0	No. 5 Boiler	1.2	0.15
P	Sat Gas KVG	0.1	0.01
Q	T-241 Heater	0.3	0.04
R	DHT2 Heater (New)	33.4	4.21
S	SRU2 Incinerator (New)	12.0	1.51
T	SRU2 Hot Oil Heater	0.1	0.01
U	Middle FCC KVG Cmprs Eng	0.14	0.02
V	East FCC KVG Compressor	0.14	0.02
W	VCU Unit	0.81	0.10
	Total	902.69	

Dispersion Modeling

A dispersion modeling analysis was performed to demonstrate compliance with the sulfur dioxide NAAQS. The models used in the compliance analysis included the Large Area Power Plant Effluent Study (LAPPES) model, the Rough Terrain Diffusion Model (RTDM), and the Multiple Point with Terrain (MPTER) model. Regulatory approval to use the LAPPES model for the Warren Generating Station was obtained as the result of a model performance comparison study which showed that LAPPES is superior to RTDM for determining air quality impacts from the Warren Generating Station in terrain above stack top. At the time of the model performance study RTDM was specified by EPA's Guideline on Air Quality Models (GAQM) as the preferred model for complex terrain. The MPTER model was, at the time, the screening model preferred by GAQM for simple terrain.

The final dispersion modeling consisted of a combination of modeling results with the model selected according to the source and the relative terrain. For the Warren Station, the LAPPES model was used for receptors in all terrain above stack top. The MPTER model was used for all receptors in terrain below stack top (simple terrain). For the sources at United Refining, the RTDM model was used for all receptors above the calculated plume height. The MPTER model was used for all simple terrain. For receptors above stack top but below plume height estimates were made with both RTDM and MPTER and the higher result, on a receptor-by-receptor basis, was selected as the estimate for that receptor.

The final dispersion modeling, based upon the SO_2 emission limits of sources amended through Operating Permits in addition to a representative background, demonstrate that the maximum SO_2 impacts do not violate the SO_2 NAAQS. The modeled impacts, including background concentrations, are as follows:

Predicted Sulfur Dioxide Impacts (micrograms per cubic meter)

Period	LAPPES	NAAQS	% of NAAQS
3-Hour	1241.	1300	95.46%
24-Hour	364.7	365	99.92%
Annual	75.6	80	94.50%

IV **Evaluation**

Section 110 of the Clean Air Act identifies what each SIP should contain. Each SIP must have the following elements: (1) a description of the air quality, (2) a comprehensive emissions inventory, (3) emission limitations and compliance schedules necessary for NAAQS attainment, (4) a permit program for new sources, (5) monitoring and reporting requirements, and (6) enforcement procedures. In addition there are administrative and technical completeness criteria for an approvable SIP. The required SIP elements are discussed below.

Air Quality

The modeling demonstration shows that the extreme (highest second-high 3-hour and 24-hour) concentrations approach but do not exceed the NAAQS. The maximum modeled annual concentration is about 95% of the NAAQS. All of these concentrations include an estimate of background $_{SO2}$. The typical pattern of air quality, for any averaging time, is to have widespread air quality that is much below the NAAQS with isolated "hot spots" of high concentrations associated with each facility. The PADEP has been monitoring SO_2 at a suburban residential site to establish a typical population exposure. The site is at the Warren High School, 345 E. Fifth Avenue. The recently monitored values are

summarized in the following table::

SULFUR DIOXIDE MONITORED AT WARREN HIGH SCHOOL

Year	3-Hour Max		24-Hour Max		Annual	
	ppm	µg/m3	ppm	µg/m3	ppm	µg/m3
1997	.093	244	.043	113	.009	24
1998	.115	301	.035	92	.008	21
1999	.085	223	.036	94	.008	21
2000	.078	204	.024	63	.006	16
2001	.106	278	.03	79	.007	18

The PADEP has been monitoring SO_s at the modeled "hot spot"since November 27, 1996. The results of the monitoring is summarized in the following table.

SULFUR DIOXIDE MONITORED AT WARREN OVERLOOK

Year	3-Hour Max		24-Hour Max		Annual	
	ppm	µg/m3	ppm	µg/m3	ppm	µg/m3
1997	.353	925	.109	286	.015	39
1998	.270	707	.108	283	.016	42
1999	.255	668	.116	304	.015	39
2000	.230	603	.100	262	.013	34
2001	.214	561	.087	228	.016	42

In each of these tables the 3-hour and 24-hour maximum values are reported although the NAAQS is based upon the highest-second high for each year. Since even the highest 24-hour average, in 1999, is only 83 per cent of the NAAQS there is no violation indicated.

Emissions Inventory

The modeling demonstration with the SIP contained a detailed emissions inventory of the allowable emissions for all of the sources of sulfur dioxide in the receptor grid. That inventory is presented in the following table:

. . . . . .

Source	SO_s Emis. Rate (g/s)	UTM East (km)	UTM North (km)	Base Elev. (ft)	Stack Height (m)	Stack Diam. (m)	Stack Temp (°K)	Exit Veloc. (m/s)
WARREN GENERATING STATION								
Units 1 and 2	583.00	650.390	4632.950	1,186	61.0	4.72	481.0	13.50
UNITED REFINING SOURCES								
Boiler House	24.58	655.660	4632.170	1,195	68.58	2.44	672.0	11.44
No. 4 Boiler	3.06	655.461	4632.394	1,195	45.72	1.70	505.4	12.37
FCC Charge Heater	0.14	655.450	4632.392	1,195	38.10	1.22	560.9	10.51
DHT1 Heater	0.01	655.906	4632.024	1,195	30.48	0.91	922.0	3.88
Prefract Reboiler (East)	1.13	655.865	4632.055	1,195	12.19	.61	699.8	10.03
Prefract Reboiler (West)	1.13	655.860	4632.052	1,195	12.19	.61	699.8	10.03
Old Reformer Heater	11.50	655.911	4632.022	1,195	45.72	1.89	699.8	10.42
Crude Heater	26.27	655.814	4632.110	1,195	45.72	2.59	699.8	15.05
Pretreater Heater	3.53	655.894	4632.129	1,195	51.82	1.89	588.7	3.84
New Reformer Heater	0.28	655.901	4632.028	1,195	45.72	2.13	533.2	6.64
Debut Reboiler	0.05	655.826	4632.095	1,195	30.48	0.85	922.0	12.79
FCC Regenerator	35.91	655.494	4632.454	1,195	45.72	2.13	533.2	15.21
Combo Flare	0.05	655.813	4632.026	1,195	7.32	3.05	1255.	2.00
FCC Flare	0.01	655.191	4632.492	1,195	10.67	3.35	1255.	0.42
No. 5 Boiler	0.15	655.887	4632.056	1,195	30.48	1.22	588.7	12.05
Saturated Gas KVG	0.01	655.774	4632.067	1,195	7.62	0.25	644.3	20.49
T-241 Heater	0.04	654.848	4632.913	1,195	12.19	0.76	644.3	8.59
DHT2 Heater	4.21	655.933	4632.157	1,195	30.48	1.07	714.0	11.35
SRU Incinerator	1.51	655.699	4632.127	1,195	38.10	0.76	922.0	18.94

Emission Limitations and Compliance Schedules Necessary for NAAQS Attainment

The Operating Permits for Reliant Energy and for United Refining Company both contain emission limitations and compliance schedules.

1. Reliant Energy

Reliant Energy's permit for this SIP revision consists of the pertinent portions of the Reliant Energy Mid Atlantic Power Holdings LLC (Reliant) Title V permit pertaining to SO_2 only. The SO_2 limitations specified for boilers no. 1, 2, 3 and 4 are:

4.000 lbs per million Btu over a 3-hour period;
3.530 lbs per million Btu over a 24-hour period; and
3.530 lbs per million Btu annual average.

Compliance with these limits is determined by using a continuous emission monitor (CEM) required to be installed and operated in the single stack serving all four boilers.

The SO_2 limitations for the combustion turbine and emergency diesel generator are 500 parts per million by volume (PPMV).

The effective date of the permit is November 21, 2001. The transmittal letter, dated December 26, 2001, from David E. Hess to Donald S. Welsh states that the expiration dates on the permits are for State purposes and for Federal enforcement purposes the Operating Permits shall remain in effect as part of the SIP until replaced pursuant to 40 CFR 51 and approved by the U.S. Environmental Protection Agency.

2. United Refining Company

The plan approval operating permit for United Refining Company contains the SO_2 emission limitations specified in the following table:

Source	Emissions in pounds per hour	Emissions in tons per year
Boiler house (boiler # 1, 2, and 3)	195.10	854.50
No. 4 Boiler	24.30	106.40
FCC charge heater	1.10	4.90
DHT1 heater	0.10	0.40
Prefractionator Reboilers (East & West)	18.00	78.80
old reformer heater (East reformer heater)	91.30	399.90
crude heater (Wheco)	207.70	909.70
vacuum heater	0.80	3.50
pretreater heater	28.00	122.60

Source	Emissions in pounds per hour	Emissions in tons per year
new reformer heater (West reformer heater)	2.20	9.60
Sat gas reboiler	0.40	1.80
Fluid Catalytic Cracking Unit (FCC Regenerator)	285.00	1248.30
combo flare	0.40	1.80
FCC flare	0.10	0.40
#5 boiler	1.20	5.30
Sat Gas KVG compressor engine	0.10	0.40
T-241 heater (Volcanic heater)	0.30	1.30
Distillate Hydrotreater heater (DHT2)	33.40	146.30
Sulfur Recovery Unit 2 (SRU2) incinerator	12.00	52.60
SRU2 hot oil heater	0.10	0.40
Old FCC unit only to be used when new FCC charge heater not in use		
West FCC KVG compressor engine standby basis only		
Middle FCC KVG compressor engine	0.14	0.60
East FCC KVG compressor	0.14	0.60
VCU Unit	0.81	0.76
Total Allowable	902.69	3950.86

For all sources except the SRU2 incinerator and the FCC regenerator compliance is determined by means of a CEM required to be installed and operated to monitor the hydrogen sulfide concentration in the refinery fuel for the source. Compliance is determined for the SRU2 incinerator and the FCC regenerator must each have a CEM system to monitor the SO_2 emissions from the sulfur recovery unit and the Fluid Catalytic Cracking Unit respectively.

Permit Program for New Sources

There are no new sources involved with this request. The existing Pennsylvania regulation 25PA§127 Construction, Modification, Reactivation and Operation of Sources, adequately provides for review and permitting of new sources. Regulation 25PA§127 continues to apply statewide.

Monitoring and Reporting Requirements

The monitoring and reporting requirements contained in each of the Operating Permits are summarized below.

A. 62-00012 Reliant Energy Mid Atlantic Power Holdings LLC

The permittee shall install, operate and maintain a continuous SO_2 monitoring system to monitor SO_2 emissions from the four boilers where all four boilers exhaust into a common stack containing a single CEMS in compliance with 25 PA Code Chapter 139 Subchapter C (relating to requirements of continuous in-stack monitoring for stationary sources). Results of emission monitoring shall be submitted to the Department on a regular basis in compliance with 25 PA Code Chapter 139, Subchapter C.

The Department may use the data from the SO_2 monitoring devices to enforce the emission limitations for SO_2 defined in this permit.

The Department may use data from the SO_2 monitoring systems to determine compliance with the applicable emission limitations for SO_2 established in this permit.

The permittee shall submit to the Department the following information on a quarterly basis:

1. The sulfur content (% by weight) of the fuel oil
2. CEM data reports

B. 62-017E United Refining Company

The sources in condition #4 above (except the SRU2 incinerator, and the FCC regenerator)shall monitor the H2S concentration in the refinery fuel for the source. The H2S monitors for these sources shall be installed, calibrated, maintained, and operated by the owner or operator of the facility in compliance with the requirements of the Department Continuous Emission Monitor (CEM) Manual.

The SRU2 incinerator and the FCC regenerator shall monitor SO_2 emissions from the sulfur recovery unit (SRU2) and the Fluid Catalytic Cracking Unit respectively. The SO_2 emissions from the SRU2 shall not exceed 0.025% by volume of sulfur dioxide at 0% oxygen on a dry basis. A continuous monitoring system shall be monitored and concentrations of SO_2 in the gasses discharged into the atmosphere from the tail gas treating unit shall be recorded. The span of the CEM shall be set at 500 ppm. The SO_2 monitors for these sources shall be installed,,calibrated, maintained, and

operated by the owner or operator of the facility in compliance with the requirements of the Department CEM Manual.

This permit applies to the emissions of sulfur dioxides (SO_2) emissions only. Emissions of other pollutants, including criteria pollutants, shall be governed by the existing Plan Approvals, Operating permits, and applicable requirements and other Rules and Regulations of the Department. This permit does not require testing and monitoring beyond what is already required under the facility's Plan Approvals, Operating Permits and the Rules and Regulations of the Department.

Enforcement Procedures

The enforcement procedures are summarized in the attached enforceability checklist.

V Conclusion

This SIP revision request contains an acceptable demonstration of attaining the NAAQS for SO_2 in the two Warren County nonattainment areas. It satisfies all requirements for an acceptable SIP revision.

VI Recommended Agency Action

The SIP revision request should be approved.

ATTACHMENT

APPROVABILITY CHECKLIST - ENFORCEABILITY

SIP Package No. 52.2020(c)(190) SIPTRAX No. PA037/072/184-4190 **Date Received:** February 24, 2000

STATE: Pennsylvania

Subject Matter: Warren County Sulfur Dioxide Implementation Plan

Specific Provision: Operating Permits

Enforceability Analysis	State Submittal	EPA Requirement	Approvability
1. Applicability:			
a. What sources are being regulated?	Warren Generating Station, Reliant Energy United Refining Company	Clarify	Approvable
b. What are criteria for exemption?	Not applicable.	Clarify	Approvable.
c. Is calculation procedure for exemption clearly specified?	Not applicable.	Example calculation or clear explanation of how to determine exemption (line by line, etc.)	Approvable.
d. Is emission inventory listed in the background document of the attainment demonstration?	An inventory of the allowable emission rates for all pertinent sources has been included. There are no nearby background sources.	Inventory including allowable and actual emissions in source category should be included, for enforcement purposes and independent of any Clean Air Act requirements, in the attainment demonstration if such data is necessary for determining baselines in regulations.	Approvable.

Enforceability Analysis	State Submittal	EPA Requirement	Approvability
e. Is the averaging time(s) used in the rule different from the ambient standard?	The orders indicate hourly averaging times for the emission limits for the pollutant sulfur dioxide.	The averaging time in the rule must be consistent with protecting the ambient standard in question. Normally, it should be equal to or shorter than the time associated with the standard. Longer term averaging is available only in limited instances provided that the ambient standard is not compromised.	Approvable.
f. What are the units of compliance (lbs VOC per gallon of solids applied less water, grains per standard cubic foot?)	The units of compliance are lbs per hour for United Refining and lbs/mmBtu for Warren Generating Station. Each of the limits is clearly stated in the permits.	Clearly stated in the rule.	Approvable.
g. Is bubbling or averaging of any type allowed? If yes, state criteria. Could a U.S. EPA inspector independently determine if the criteria were met? Does EPA have to approve each case.	Not applicable.	Explicit description of how averaging, bubbling, or equivalency is to be determined. VOC equivalency must be on a "solids applied" basis. Any method must be independently reproducible. Provision must be explicit as to whether EPA case-by-case approval required. If provision intended to be "generic" then EPA bubble policy must be met.	Approvable.

Enforceability Analysis	State Submittal	EPA Requirement	Approvability
h. If there is a redesignation, will this change the emission limitations? If yes, which ones and how?	Not applicable.	Regulation may not automatically allow for self nullification upon redesignation of area to attainment. New maintenance demonstration required in order to drop regulation.	Approvable

Enforceability Analysis	State Submittal	EPA Requirement	Approvability
2. Compliance Dates:			
a. What is compliance date?	The terms of the permits are effective upon issuance.	Must not be later than approved or about to be approved date of attainment unless emission reductions are not necessary for attainment. In some cases, it will be necessary for the regulation to specify dates in compliance schedules that are required to be submitted by source to state.	Approvable.
b. What is the attainment date?	There is no attainment date explicit in the SIP revision. The recent monitoring date in the area indicates that Warren County is already attaining the SO_2 NAAQS.	The comment above applies.	Inasmuch as attainment is currently demonstrated this is Approvable.

Enforceability Analysis	State Submittal	EPA Requirement	Approvability
3. Specificity of Conduct:			
a. What test method is required?	Test methods are explicitly prescribed. CEMs are required for the most important sources.	Test method must be explicitly stated.	Approvable.
b. What is the averaging time in compliance test method?	The averaging times in the compliance test method are to be equal to the hourly averaging times of the established emission limits.	Averaging time and application of limit must be explicit.	Approvable.
c. Is a compliance calculation or evaluation required? (i.e., daily weighted average for VOC).	No calculations are required.		Approvable.
d. If yes to "c", list the formula, period of compliance, and/or evaluation method.		Formula must be explicit.	Approvable.
4. Incorporation by Reference:			
a. What is state authority for rulemaking?	The orders were authorized and entered pursuant to Chapter 127 of the Rules and Regulations of the Pennsylvania Department of Environmental Protection.	The State has the authority to adopt EPA test methods by reference.	Approvable.
b. Are methods or rules incorporated by reference in the right manner.	Where appropriate references are made to EPA or ASTM methods.		Approvable.
5. Recordkeeping:			
a. What records are required to determine compliance?	Daily emissions records are required to be available for five years and reported upon request by the DEQ.	Clarify	Approvable.

Enforceability Analysis	State Submittal	EPA Requirement	Approvability
b. In what form or units (lbs-/gal, gr/dscf, etc.) must the records be kept? On what time basis (instantaneously, hourly, daily)?	Records of emissions must be kept in units that are consistent with the applicable emission limitations.	Records to be kept must be consistent with units of compliance in the performance requirements, including the applicable time period.	Approvable.
c. Does the rule affirmatively require the records be kept?	The orders require the maintenance of records for 5 years.	There must be a clear separately enforceable provision that requires records to be kept.	Approvable.
6. Exemptions:			
a. List any exemptions allowed.	Not applicable.	Must be clearly defined and distinguishable from what constitutes a violation.	Approvable.
b. Is the criteria for application clear?	Not applicable.		Approvable.
7. Malfunction Provisions:	Not applicable	Rule must specify what exceedances may be excused, how the standard is to be applied, and who makes the determination.	Approvable.

Notice of Proposed Revision to the Pennsylvania State Implementation Plan for Sulfur Compound Emissions

A Single Comprehensive SIP Revision for the Sulfur Dioxide Nonattainment Area of Conewango Township, Pleasant Township, Glade Township, and the City of Warren in Warren County Pennsylvania.

The Department of Environmental Protection proposes to submit a single comprehensive State Implementation Plan (SIP) revision to the United States Environmental Protection Agency for the aforementioned area. This SIP revision contains enforceable operating permit emission limitations for the GPU Warren Generating Station and an air quality modeling demonstration indicating the area is in attainment of the National Ambient Air Quality Standards for sulfur dioxide. A non-guideline model is being employed for use in the attainment demonstration for the SIP revision.

If adopted, the proposed SIP revision will be submitted to the United States Environmental Protection Agency for approval.

The public hearing will be held on Wednesday, October 29, 19976, at 1:00 p.m. at the following location:

Department of Environmental Protection
Warren District Office
321 North State Street
North Warren, PA. 16365

Persons wishing to present testimony at the hearing must contact Michael Hopko at 717-787-4310 or at the address given below no later than Friday, October 24, 1997, to reserve a time to present testimony. Oral testimony will be limited to 10 minutes for each witness and 3 written copies of the oral testimony must be submitted at the hearing. Each organization should designate one witness to present testimony on its behalf.

Persons interested in submitting written comments should send the comments to J. Wick Havens, Chief, Division of Air Resource Management at the address given below by November 12, 1997. Copies of the proposed revision may be obtained from the Bureau of Air Quality, Rachel Carson State Office Building, 12th Floor, P.O. Box 8468, Harrisburg, PA 17105-8468 or by telephone at 717-787-4310.

Persons with a disability who wish to attend the hearing, and require an auxiliary aid, service or other accommodation to participate in the proceeding, should contact J. Wick Havens at the above address or telephone number; or for TDD users, the AT&T Relay Service at 1-(800)-654-5984 to discuss how the Department can best accommodate their needs

PO #1504152-01 7/24/92*135415

COMMONWEALTH OF PENNSYLVANIA
STD—521 REV. 12-88

PUBLICATIONS AUTHORIZATION AND INVOICE

INVOICE NO. 64701

PUBLICATIONS AUTHORIZATION (To be completed by agency):

TO. (NAME AND ADDRESS OF NEWSPAPER)
Warren Times Observer
205 Pennsylvania Avenue W.
Box 188
Warren, PA 16365

FEDERAL I D NO./SOC SEC NO: 25-1156455

FROM: (NAME AND ADDRESS OF AGENCY)
DEP _ AIR QUALITY
RCSOB 12TH FLOOR
400 MARKET ST
HARRISBURG PA 17101

AGENCY TELEPHONE NO: 717-787-9702

HEREWITH IS ENCLOSED COPY FOR PUBLICATION OF ADVERTISEMENT FOR PROPOSALS TO
☐ EMPLOY ☐ PURCHASE ☐ CONTRACT ☐ SELL

TYPE OF AD: ☒ CLASSIFIED DISPLAY AD ☐ LEGAL NOTICE

PUBLISH ADVERTISEMENT (NO OF TIMES)	MAXIMUM NO OF LINES	DATE	ORDER NO
one	2 column display ad	9-22-97	

DATES OF INSERTION: [redacted] 10-4-97

SIGNATURE FOR AGENCY: [signature]

You, as vendor, are authorized to publish this advertisement in your newspaper, subject to the terms of this order, as follows: Advertisement to be published in regular advertising columns, no position specified; caption of two lines and signature to be in capitals and subject matter and title of officer to be set solid in type regularly used by your newspaper for public (legal) notice advertising; charge to be made at the rate charged to and paid by commercial advertisers for matter similarly set and occupying similar space; advertisement to be run in the editions specified above. Vendor agrees that, in the performance of any contract awarded to it hereunder, said vendor will not discriminate against any employe or other persons on account of race, color, sex, religious creed, ancestry, age or national origin and that the Commonwealth, upon receipt of satisfactory evidence of such discrimination, shall have the right to cancel said contract. Return this copy at once if you will not accept this advertisement under the terms set forth.

Proof of advertising in the form of a tearsheet must be included on Parts 1, 2 & 3. Return original and two copies (signed by the editor or publisher) to Agency listed above. Part 1 must be notarized. Part 4 is yours.

Commonwealth to be billed only for actual number of printed lines published.

ACCOUNT CODE	FUND	DEPT	APP	YEAR	LDG	ORG	COST FUNCTION	OBJ	AMOUNT
	001	035	[redacted] 67	97	[redacted]1	2710	06408	325	

INVOICE (To be completed by publisher):

[redacted]	DATE OF INSERTION	ACTUAL NO OF PRINTED LINES	COST PER LINE	TOTAL AMOUNT
1st Ad	October 4, 1997	126	1.23	154.98
2nd Ad				proof(s) 4.00
3rd Ad				
			GRAND TOTAL →	158.98

PASTE TEARSHEET HERE

Commonwealth of Pennsylvania
County of Warren

Before me, the subscriber, a Notary Public in and for said County, personally came Kevin Mead who being duly sworn, doth depose and say that he is* Publisher the Warren Times Observer a general newspaper published at Warren, PA that the advertisement, of which tearsheet is attached hereto, was published in the regular advertising columns of said newspaper, in the editions of said newspaper, in all respects as ordered and invoiced above; and that the Commonwealth is not charged therefor at a rate higher than is charged any ordinary commercial advertiser for a similar amount of matter occupying similar space and set in a similar manner, in said newspaper.

Sworn and subscribed before me this 24 day of October 1997

[signature]
NOTARY PUBLIC

Notarial Seal
Lee J. Ellison, Notary Public
Warren, Warren County
My Commission Expires Nov. 25, 1997

My commission expires

[signature]
SIGNATURE OF AFFIANT

*This affidavit must be made by the Owner, Publisher, or the designated agent of the owner or publisher.

NOTICE

[illegible] of [illegible] sion to the Pennsylvania State [illegible]plication

[illegible] Compliance Emissions [illegible]

A Single [illegible] P [illegible] on for the Sulfur Dio[illegible] onattainment [illegible] Township, Glade [illegible]ship, and the [illegible] Warren [illegible] County, Pennsylvania.

The Department [illegible] Environmental Protection proposes [illegible] a single [illegible] Implementation Plan (SIP) revision to [illegible] United States [illegible] for the aforementio[illegible] This SIP revi[illegible]s enforc[illegible] rating [illegible] emission [illegible] for the GPU [illegible] quality [illegible] indicating the [illegible] Standards for [illegible] for use [illegible] attainment demonstration [illegible] revision.

If adopted [illegible] SIP revision [illegible] United States Environmental Protection Agency for approval.

The public hearing will be held on Wednesday, November 5, 1997, at 1:00 p.m. at the folowing location:

Department of Environmental Protection
Warren District Office
321 North State Street
North Warren, PA

Persons wishing to present testimony at the hearing must contact Michael Hopko at 717-787-4310 or at the address given below no later than Friday, October 31, 1997, to reserve a time to present testimony. Oral testimony will be limited to 10 minutes for each witness and 3 written copies of the oral testimony must be submitted at the hearing. Each organization should designate one witness to present testimony on its behalf.

Persons interested in submitting written comments should send the comments to J. Wick Havens, Chief, Division of Air Resource Management at the address given below by November 19, 1997. Copies of the proposed revision may be obtained from the Bureau of Air Quality, Rachel Carson State Office Building, 12th Floor, P.O. Box 8468, Harrisburg, PA 17105-8468 or by telephone at 717-787-4310.

Persons with a disability who wish to attend the hearing and require an auxiliary aid, service or other accomodation to participate in the proceeding, should contact J. Wick Havens at the above address or telephone number, or for TDD users, the AT&T Relay Service at 1-(800)-654-5984 to discuss how the department can best accomodate their needs.

October 4, 1997-1t 77930

PENNSYLVANIA BULLETIN

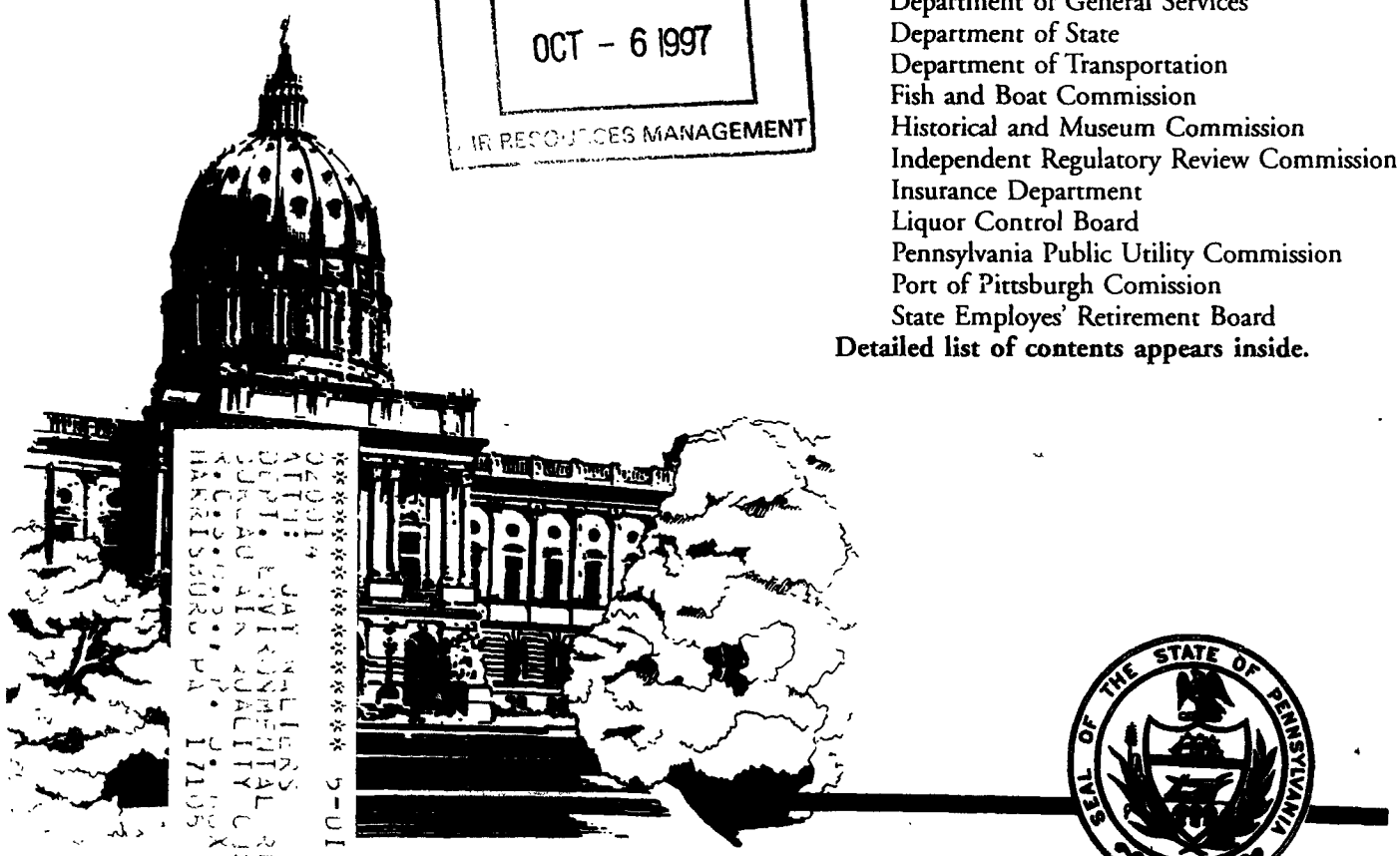
Volume 27 Number 40
Saturday, October 4, 1997 • Harrisburg, Pa.
Pages 5081—5232

See Part II page 5173 for the Subject Index for January—September 1997

Part I

Agencies in this issue:

Detailed list of contents appears inside.



Questions concerning the agenda can be directed to awrence Ruane at (717) 783-9590 or e-mail to uane.Lawrence@a1.dep.state.pa.us. The agenda for this eeting will be available through the Public Participation enter on the DEP's World Wide Web site at http:// ww.dep.state.pa.us.

Persons in need of accommodations as provided for in ie Americans With Disabilities Act of 1990 should ntact Lawrence Ruane directly at (717) 783-9590 or rough the Pennsylvania AT&T Relay Service at (800) 4-5984 (TDD) to discuss how the Department may commodate their needs.

JAMES M. SEIF,
Secretary

[Pa.B. Doc. No. 97-1593. Filed for public inspection October 3, 1997, 9:00 a.m.]

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roposed Revision to the Pennsylvania State Implementation Plan for Sulfur Compound Emissions

A single comprehensive SIP revision for the sulfur ioxide nonattainment area of Conewango Township, leasant Township, Glade Township and the City of 'arren in Warren County, PA.

The Department of Environmental Protection (Depart- ient) proposes to submit a single comprehensive State nplementation Plan (SIP) revision to the United States nvironmental Protection Agency (EPA) for the aforemenoned area. This SIP revision contains enforceable oper- ting permit emission limitations for the GPU Warren enerating Station and an air quality modeling demon- ration indicating the area is in attainment of the ational Ambient Air Quality Standards for sulfur diox- le. A nonguideline model is being employed for use in ie attainment demonstration for the SIP revision.

If adopted, the proposed SIP revision will be submitted) the EPA for approval.

The public hearing will be held on Wednesday, Novem- er 5, 1997, at 1 p.m. at the Department of Environmen- al Protection, Warren District Office, 321 North State treet, North Warren, PA.

Persons wishing to present testimony at the hearing iust contact Michael Hopko at (717) 787-4310 or at the ddress that follows no later than Friday, October 31, 997, to reserve a time to present testimony. Oral testi- ony will be limited to 10 minutes for each witness and hree written copies of the oral testimony must be ubmitted at the hearing. Each organization should desig- ate one witness to present testimony on its behalf.

Persons interested in submitting written comments hould send the comments to J. Wick Havens, Chief,)ivision of Air Resource Management at the following ddress by November 19, 1997. Copies of the proposed evision may be obtained from the Bureau of Air Quality, achel Carson State Office Building, 12th Floor, P.O. Box 468, Harrisburg, PA 17105-8468 or by telephone at (717) 87-4310.

Persons with a disability who wish to attend the earing, and require an auxiliary aid, service or other ccommodation to participate in the proceeding, should ontact J. Wick Havens at the above address or telephone umber; or for TDD users, the AT&T Relay Service at 1 (800)-654-5984 to discuss how the Department can best accommodate their needs

JAMES M. SEIF,
Secretary

[Pa.B. Doc. No. 97-1594. Filed for public inspection October 3, 1997, 9:00 a.m.]

Revised NPDES General Permit PAG-2 for Discharges of Stormwater Associated With Construction Activities (1997 Amendment)

The Department of Environmental Protection (Department) by this notice is revising and renewing the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity (PAG-2) which was originally issued on October 10, 1992 (22 Pa.B 5063) with technical corrections on January 23, 1993 (23 Pa.B 492). PAG-2 is scheduled to expire on October 9, 1997. On October 19, 1996, the Department published a notice of proposed revisions to PAG-2 in the *Pennsylvania Bulletin*, 26 Pa. B. 5055, with a 30-day public comment period. The Department has received comments regarding the proposed revisions from 17 individuals representing the building industry, county conservation districts and State and Federal agencies. After consideration of the comments, the Department is amending the permit as follows:

- The filing fee has been increased from the current $100 to $250.
- The upper acreage limitation of 25 acres for participation in PAG-2 has been eliminated.
- Monitoring requirements have been revised to require visual site inspections of erosion and sediment control best management practices.
- Requirements have been added for preconstruction notification and conferences.
- Erosion and sediment control plans are required to be developed, submitted and approved for all spoil areas, borrow areas and phased projects.
- The permit encourages pollution prevention techniques by prohibiting its use in special protection waters, and by requiring proper disposal or recycling of building materials and wastes.
- The permit has been clarified so that both the permittee and copermittees are responsible for filing transfer agreements, maintaining erosion and sediment control best management practices (BMPs), and providing required notifications to the reviewing entity.
- Requirements have been added for the consideration of Federal and State threatened or endangered species and their habitat.
- Clarification has been provided to ensure that coal and noncoal mining activities are not eligible for coverage under this permit.
- Clarification has been added to ensure that wetlands are adequately protected.
- Conditions of the permit which were determined to be unnecessary, redundant or prescriptive have been eliminated.

Extension of Coverage under PAG-2 issued in 1992

The Department is, by this notice, granting permission for persons who submitted an administratively complete

GPU
GENCO

NOV 2 0 1997

GPU Generation, Inc.
1001 Broad Street
Johnstown, PA 15907
Tel 814-533-8111

Writer's Direct Dial Number
(814) 533-8193

November 13, 1997

Certified Mail

J. Wick Havens, Chief
Division of Air Resource Management
Bureau of Air Quality Control
Rachel Carson State Office Building
12th Floor
P.O. Box 8468
Harrisburg, PA 17105-8468

RE: ***GPU Genco Comments on the Proposed Pennsylvania SIP Revision For the SO_2 Non-attainment Area in Warren County, Pennsylvania***

Dear Mr. Havens:

GPU Generation, Inc. (Genco), the operator of the Warren Generating Station, respectfully submits the following comments on the proposed state implementation plan revision (dated September 27, 1997) for the sulfur dioxide non-attainment area in Warren County, Pennsylvania.

1. Background, Page 1 of the SIP Revision

The first sentence of the Background section incorrectly identifies the owner and operator of Warren Station. The sentence should state: "The Pennsylvania Electric Company (Penelec) owns and GPU Generation Corporation (Genco) operates the Warren Generating Station."

2. Modeling Conclusions, Page 7 of the SIP Revision

The final sentence of this section [which begins "As part of the RACT program . . ."] is no longer an accurate description of Warren Station's RACT plan. By letter dated July 24, 1996 GPU Genco revised the Warren Station RACT plan so that it no longer includes

repowering of Warren Station under the Clean Coal Technology Program. This last sentence should be deleted.

3. Appendix B, Cover Page

GPU Genco objects to the identification of the attached permit as a "PSD Permit." The proposed permit is simply an operating permit, it is not a PSD permit.

4. Appendix B, Warren Station Operating Permit, Page 1, Expiration Date

GPU Genco objects to the 12/31/97 expiration date. Under 25 Pa. Code § 127.446(a), operating permits are issued for a 5-year term, unless a shorter period is required or requested. GPU Genco is not requesting a shorter permit term, nor is one required under the Clean Air Act or regulations thereunder. The expiration date should be 5 years from the date of issuance or, at the very least, the issuance date of the Station's Title V operating permit. A 12/31/97 expiration date — or similar short-term expiration date — would require GPU Genco to apply for a renewal operating permit within days after, if not before, the operating permit is issued. *See* Condition 2 of the Operating Permit.

5. Appendix B, Warren Station Operating Permit, Condition 4

GPU Genco requests that this condition be amended to state that Warren Station's boilers 1-4 are no longer subject to the current SIP SO_2 emission limit (*i.e.*, 4 lbs at any time) and the SO_2 emission limits in 25 Pa. Code § 123.22(a) (*i.e.*, 4 lbs over any 1-hour period; 3.7 lbs/mmBtu 30-day running average; 4.0 lbs/mmBtu daily average not be exceeded more than 2 days in any running 30-day period; and 4.8 lbs/mmBtu daily average not to be exceeded at any time). Given the new 3-hour, 24-hour and annual limits, these existing limits are no longer necessary to protect air quality and would impose costly and unnecessary monitoring, recordkeeping and reporting burdens. To clarify that these redundant and unnecessary limits are supplanted by new limits, we request that the following sentence be added to Condition 4:

Except as provided in Condition 7, boilers 1, 2, 3 and 4 are not subject to the SO_2 limits in 25 Pa. Code Section 123.22 or other SO_2 limits for combustion units previously approved as part of the Commonwealth's SIP.

6. Appendix B, Warren Station Operating Permit, Condition 4

To clarify that the new SO_2 emission limits apply to Boilers 1-4 in the aggregate (as demonstrated by the modeling studies) and not to each boiler individually, we request that the words "in the aggregate" be added to the first line of Condition 4 (*i.e.*, "The allowable SO_2 emission rate (lb/MMBTU) for boilers 1, 2, 3 and 4 shall, in the aggregate, not exceed . . . .").

7. Appendix B, Warren Station Operating Permit, Condition 10

Condition 10 imposes on the combustion turbine a fuel oil sulfur content limit of 0.5% by weight "as required by 25 Pa. Code Section 123.22." We object to phrase "as required by 25 Pa. Code Section 123.22" because the combustion turbine — a direct fired combustion source — is not a "combustion unit" as defined in 25 Pa. Code § 121.1 and, thus, is not subject to Section 123.22. This phrase should be deleted.

8. Appendix B, Warren Station Operating Permit, Condition 11

This condition requires quarterly fuel testing for sulfur content for the combustion turbine. Given the infrequent operations of the combustion turbine, we request that the Station be allowed to demonstrate compliance with the sulfur in fuel limits by using certificate of analysis certifications from the fuel supplier, rather than quarterly testing. *See* 40 C.F.R. § 60.44c(h) (fuel supplier certification allowed for NSPS Subpart Dc units). This change would reduce the Station's monitoring and recordkeeping cost without any detriment to the environment. Alternatively, we request that fuel analysis not be required in a calendar quarter when no new fuel is received in the storage tank (for the combustion turbine) during that quarter.

★ ★ ★ ★

GPU Genco appreciates the Department's consideration of these comments. If you have any questions or comments, please call me at (814) 533-8193.

Sincerely,

Keith A. Schmidt
Environmental Scientist

KAS/cms/KAS208C

cc: Larry Wonders

United Refining Company • Petroleum Products

NOV 2 1 1997

November 19, 1997

J. Wick Havens
Chief, Division of Air Resource Management
Bureau of Air Quality
Rachel Carson State Office Building
12th Floor
P.O. Box 8468
Harrisburg, Pennsylvania 17105-8468

Re: Warren SO_2 SIP

Dear Mr. Havens

United Refining Company has reviewed the proposed revision to the State Implementation Plan (SIP) for sulfur compound emissions in Warren County. Included in the package is a draft operating permit (#OP-62-017A) for the Warren refinery. United has comments on this draft permit.

Condition 4 of the draft permit is a table showing individual sources, permit numbers, and emission rates. Several sources have the parenthetical note "emission limit modified as part of permit 62-302-10A." These rates first appeared in the permit application for the DHT2 (62-312-030) and SRU2 (62-312-031) submitted in November of 1992. They were the SO_2 levels arrived at from the modeling work done as part of a 1987 consent order.

In addition, the No.1 sulfur recovery unit (SRU1) is not listed as a stand-by unit. The DHT2/SRU2 permit application referenced above also describes SRU1 as being available should SRU2 be shut down.

Please incorporate these changes into any operating permit issued as a result of the proposed SIP revision.

Sincerely,
UNITED REFINING COMPANY

Mark Sternberg
Mark E. Sternberg
Environmental Coordinator

cc: Matt Williams - DEP, Meadville

Box 780 • Warren, Pennsylvania 16365 • 814-723-1500 • FAX 814-726-4603 • 814-726-4602

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
DEP
December 24, 1997
814/332-6940
Fax: 814/332-6117

JAN 9

SUBJECT: Review of Warren SO2 SIP Revision Hearing
GPU Warren Generating Station
United Refining Company

TO: File # OP-62-017A
File # 62-306-001

FROM: Matthew M. Williams MMW
Air Pollution Control Engineer
Air Quality Control
Northwest Regional Office

THROUGH: Devendra Verma DV
Engineering Services Chief
Air Quality Control
Northwest Regional Office

Larry W. Wonders LW
Regional Manager
Air Quality Control
Northwest Regional Office

The Department held a hearing on the proposed SIP revision for sulfur compound emissions on December 5, 1997. Notice of this hearing was published in the Pennsylvania Bulletin and the Warren Times Observer on October 4, 1997. The Notice gave the meeting date and the starting time of 1:00 PM for the hearing. The meeting was held at the Department of Environmental Protection Warren District Office (321 North State Street, North Warren, PA). The attendance sheet for the meeting is attached. Persons wishing to present testimony at the hearing were requested to reserve a time to present testimony (as explained in the Notice). Mr. Williams introduced himself and opened the hearing with welcome comments. He then read a prepared statement which explained the purpose of the hearing, and opened the floor for any public comments. The only persons in attendance were Mr. Mark Sternberg from United and Mr. Williams. After approximately 1 hour and 15 minutes, the closing statement (which included the public comment period of November 19,1997) was made and the meeting was adjourned. Mr. Williams waited until approximately 3:00 PM for any other attendants for the hearing. The meeting was recorded on tape. No comments were received at the time of the hearing.

cc: Mike Hopko Bureau of Air Quality Hsbg.
Warren District Offfice- Air Quality Division.

SO_2 SIP REVISION WARREN
PUBLIC HEARING
November 5, 1997
Record of Attendance

Name	Address	Telephone	Presentation (Yes/ No)
1. Matt Williams	230 Chestnut ST Meadville PA 16335	(814) 332-6940	No
2. MARK STERNBERG	PO BOX 780 WARREN PA 16365	814-726-4736	No.
3.			
4.			
5.			
6.			
7.			
8.			
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10.			
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19.			
20.			

Proposed Revision to the Pennsylvania State Implementation Plan for Sulfur Compound Emissions

My name is Matt Williams. I am an Air Pollution Control Engineer for the Bureau of Air Quality

I would like to welcome you to this Department of Environmental Protection public hearing on a proposed State Implementation Plan (SIP) revision for the Sulfur Dioxide nonattainment area of Conewango Township, Pleasant Township, Glade Township, and the City of Warren in Warren County Pennsylvania.

The Department of Environmental Protection proposes to submit a single comprehensive State Implementation Plan (SIP) revision to the United States Environmental Protection Agency for the aforementioned area. This SIP revision contains enforceable operating permit emission limitations for the GPU Warren Generating Station and an air quality modeling demonstration indicating the area is in attainment of the National Ambient Air Quality Standards for sulfur dioxide. A non-guideline model is being employed for use in the attainment demonstration for the SIP revision.

If adopted, the proposed SIP revision will be submitted to the United States Environmental Protection Agency for approval.

Notice of today's public hearing was published in the Pennsylvania Bulletin and in the Warren Times Observer on October 4, 1997.

The public is invited to comment on the proposed SIP revision at today's hearing. Oral testimony will be limited to 10 minutes for each witness and 3 written copies of the oral testimony must be submitted at this time. Each organization should designate one witness to present testimony on its behalf.

Persons interested in submitting written comments in addition to or in place of oral testimony should send their comments to J. Wick Havens, Chief, Division of Air Resource Management at the address given below by November 19, 1997. Copies of the proposed revision may be obtained from the Bureau of Air Quality, Rachel Carson State Office Building, 12th Floor, P.O. Box 8468, Harrisburg, PA 17105-8468 or by telephone at 717-787-4310.

Following the close of the comment period, the Department will summarize the comments received and make appropriate revisions to the SIP proposal.

I will now call the first witness.

* The public comment period will expire on Nov 19, 1997

TOTAL P.02

Appendix C

Comment/Response Document

This document summarizes the comments received on the proposed revision to the State Implementation Plan (SIP) For The Sulfur Dioxide Nonattainment Area Of Conewango Township, Pleasant Township, Glade Township, and The City Of Warren In Warren County, Pennsylvania.

Notice of public hearing was published in the Pennsylvania Bulletin and in the Warren Times Observer on October 4, 1997. A copy of the Pennsylvania Bulletin and Warren Times Observer notices are included with this document.

A public hearing was scheduled for Wednesday, November 5, 1997, starting at 1:00 p.m. at the Department's Warren district office, 321 North State Street, North Warren, PA. The public comment period closed on November 19, 1997. No oral testimony was presented at the public hearing. The following persons or organizations submitted written comments on the proposed SIP:

Commentators

Mark E. Sternberg, Environmental Coordinator
United Refining Company

Keith A. Schmidt, Environmental Scientist
GPU Generation, Inc. (Genco), now Reliant

The following summarizes the comments received on the proposed State Implementation Plan (SIP) and provides the Department's response.

1. **Background, Page 1 of the SIP Revision**

The first sentence of the Background section incorrectly identifies the owner and operator of Warren Station. The sentence should state: "The Pennsylvania Electric Company (Penelec) owns and GPU Generation Corporation (Genco) operates the Warren Generating Station."

Commentator: Keith A. Schmidt

Response: The Department has revised the document to correctly identify the owner and operator of Warren Station.

2. **Modeling Conclusions, Page 7 of the SIP Revision**

The final sentence of this section [which begins "As part of the RACT program..."] is no longer an accurate description of Warren Station's RACT plan. By letter dated July 24, 1996 GPU Genco revised the Warren Station RACT plan so that it no longer includes repowering of Warren Station under the Clean Coal Technology Program. This last sentence should be deleted.

Commentator: Keith A. Schmidt

Response: The Department has revised the document by deleting the above mentioned sentence.

3. **Appendix B, Cover Page**

GPU Genco objects to the identification of the attached permit as a "PSD Permit." The proposed permit is simply an operating permit; it is not a PSD permit.

Commentator: Keith A. Schmidt

Response: The Department has revised the document by changing PSD permit to operating permit.

4. **Appendix B, Warren Station Operating Permit, Page 1, Expiration Date**

GPU Genco objects to the 12/31/97 expiration date of the Warren Station Operating Permit.

Commentator: Keith A. Schmidt

Response: The expiration date shown on the operating permit is for State purposes. For federal enforcement purposes

under the Pennsylvania State Implementation Plan (SIP), the Operating Permit shall remain in effect as part of the SIP until replaced pursuant to 40 CFR 51 and approved by the US Environmental Protection Agency (EPA).

5. **Appendix B, Warren Station Operating Permit, Condition 4**

GPU Genco requests that this condition be amended to state that Warren Station's boilers 1-4 are no longer subject to the current SIP SO_2 emission limit (i.e., 4 lbs at any time) and the SO_2 emission limits in 25 Pa. Code § 123.22(a) (i.e., 4 lbs over any 1-hour period; 3.7 lbs/mmBtu 30-day running average; 4.0 lbs/mmBtu daily average not be exceeded more that 2 days in any running 30-day period; and 4.8 lbs/mmBtu daily average not to be exceeded at any time). Given the new 3-hour, 24-hour and annual limits, these existing limits are no longer necessary to protect air quality and would impose costly and unnecessary monitoring, record keeping and reporting burdens.

Commentator: Keith A. Schmidt

Response: The Department disagrees that the Section 123.22 limits are no longer applicable. These limits do apply to the boilers. However, the new permit limits are more stringent. This means compliance with the permit will also result in compliance with Section 123.22 under the current fuel firing configurations. The following will be added to condition #4: "Compliance with the above emission limits will establish compliance with the limitations in 25 Pa. Code Section 123.22".

6. **Appendix B, Warren Station Operating Permit, Condition 4**

To clarify that the new SO_2 emission limits apply to Boilers 1-4 in the aggregate (as demonstrated by the modeling studies) and not to each boiler individually, we request that the words "in the aggregate" be added to the first line of condition 4.

Commentator: Keith a. Schmidt

Response: The Department agrees with this comment. The condition now reads, "The allowable SO_2 emission rate (lb/MMBTU) for boilers 1,2,3 and 4, in the aggregate, shall not exceed..." This will allow some averaging between the boilers. However, individually each boiler cannot exceed the Section 123.22 standards.

7. **Appendix B, Warren Station Operating Permit, Condition 10**

Condition 10 imposes on the combustion turbine a fuel oil sulfur content limit of 0.5% by weight "as required by 25 Pa. Code Section 123.22." We object to phrase "as required by 25 Pa. Code Section 123.22" because the combustion turbine - a direct fired combustion source - is not a "combustion unit" as defined in 25 Pa. Code § 121.1 and, thus, is not subject to section 123.22. This phrase should be deleted.

Commentator: Keith A. Schmidt

Response: The Department agrees that the combustion turbine is not a "combustion unit" by definition and the phrase "as required by 25 Pa. Code Section 123.22" is deleted.

8. Appendix B, Warren Station Operating Permit, Condition 11

This condition requires quarterly fuel testing for sulfur content for the combustion turbine. Given the infrequent operations of the combustion turbine, we request that the Station be allowed to demonstrate compliance with the sulfur in fuel limits by using certificate of analysis certifications from the fuel supplier, rather than quarterly testing. This change would reduce the Station's monitoring and record keeping cost without any detriment to the environment. Alternatively, we request that fuel analysis not be required in a calendar quarter when no fuel is received in the storage tank (for the combustion turbine) during that quarter.

Commentator: Keith A. Schmidt

Response: The Department agrees with GPU Genco that to demonstrate compliance with the sulfur in fuel limits the certificate of analysis certifications from the fuel supplier shall be enough. Condition #11 is revised as follows: "For the combustion turbine, all fuel oil certificates of analysis shall be maintained at the site and made available to Department personnel if requested." Fuel analysis is not required in a calendar quarter when no new fuel is received in the storage tank (for the combustion turbine) during that quarter.

9. Condition 4 of the United refining draft permit

The permit for the Warren refinery, United is a table showing individual sources, permit numbers, and emission rates. Several sources have the parenthetical note

"emission limit modified as part of permit 62-302-10A." These rates first appeared in the permit application for the DHT2 (62-302-030) and SRU2 (62-312-031) submitted in November of 1992. They were the SO_2 levels arrived at from the modeling work done as part of a 1987 consent order.

Commentator: Mark E. Sternberg

Response: The company is providing background for the parenthetical emission limits listed in the permit. The Department was not requested to make any revisions to condition 4 of the draft permit

10. No.1 sulfur recovery unit (SRU1)

The No.1 sulfur recovery unit (SRU1) is not listed as a stand-by unit. The DHT2/SRU2 permit application referenced above also describes SRU1 as being available should SRU2 be shut down.

Commentator: Mark E. Sternberg

Response: The Department discussed this comment with the company prior to finalizing the permit. The SRU1 is not listed on the permit.